

# Railway Age Gazette

SECOND HALF OF 1916—No. 2.

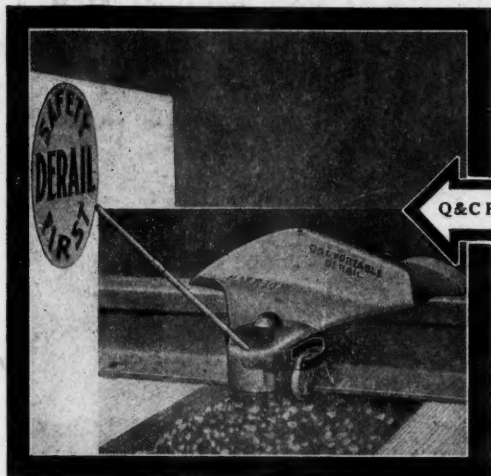
SIXTY-FIRST YEAR

NEW YORK: Woolworth Building  
CHICAGO: Transportation Building

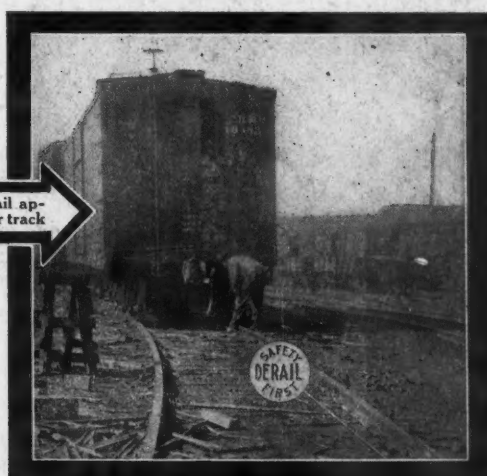
NEW YORK—JULY 14, 1916—CHICAGO

CLEVELAND: Citizens Building  
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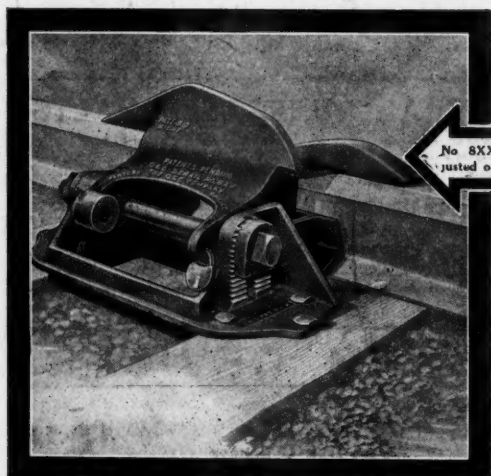
## Q & C Derailers



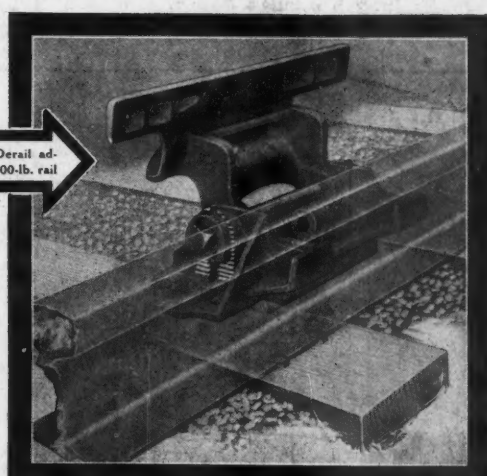
Q & C Portable Derail



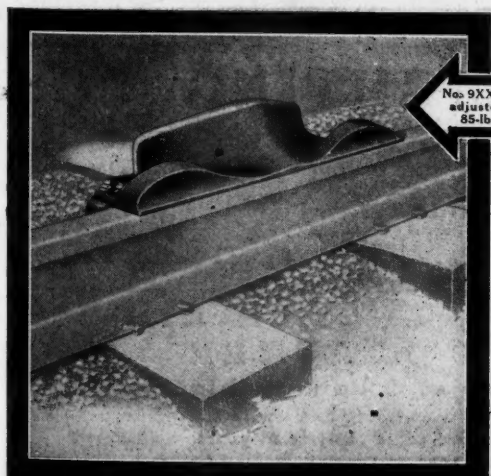
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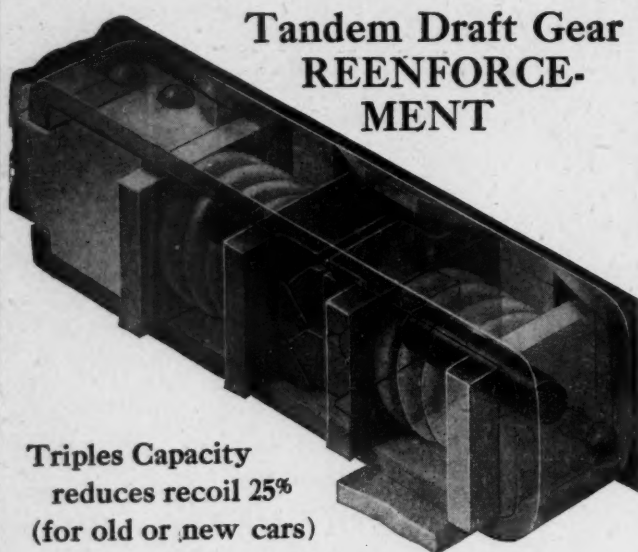
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# Railway Age Gazette

Volume 61

July 14, 1916

No. 2

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\*Illustrated.

President Wilson, in a recent speech, raised the question of whether the business men of the country are willing to do

### Private Concerns and Preparedness

has been circularizing its members to find out whether they will encourage their employees to undergo military training and will permit them to engage in such training without loss of wages, provided the training is within their own city or town. Many of the companies circularized are railway supply concerns. The railway supply concerns of the United States are owned and managed by men who are second to no other class of citizens in patriotism, and doubtless they will give their employees as much freedom and opportunity to get military training as any others. But, in this connection one point ought to be emphasized. This is, that it is the business of the government, and not that of private concerns, to do the work and bear the expense of preparing the country to defend itself. The two very primary functions of a government are to maintain order at home and to protect the nation from foreign powers. It is a remarkable commentary upon our governments that they are constantly assuming functions which are of secondary importance, as compared with these, and which in many cases are not necessarily functions of government at all, and that at the same time they call upon the business interests of the country to help them do the work and bear the expense of performing those functions which peculiarly belong to every government. Only when the government out of its own revenues adequately provides for preparedness will the burden of national defense be fairly distributed among those who should bear it.

The Hon. Clifford Thorne, chairman of the Railroad Commission of Iowa, we infer from the expressions of the Iowa

### Clifford Thorne's Automobile

press, has become the possessor of a new automobile. Whether it is a real automobile or merely a flivver doth not appear, but it seems that it is a gift. One ought not, to paraphrase an old saying, to look a gift automobile in the mouth, but this advice was extended to the recipient of the gift and not to innocent bystanders, and there are certain of the latter class in Iowa

who are disposed to look askance at Clifford's new car. We quote the following from the Cedar Rapids (Iowa) Republican:

While the newspapers are discussing Mr. Thorne, who is still railroad commissioner, after being defeated for Congress, we would at least suggest to him as kindly as we can, for we do not want to be unkind even to Clifford, that he return that automobile, the gift of which was so much heralded by the givers. If those shippers who presented that automobile should have any question about rates or regulation come up with the railroads and they should appeal to the railroad commission, how would Mr. Thorne as chairman of that commission act and vote? What chance would the railroads have against those shippers who made the present of the automobile—not now accusing Mr. Thorne of any desire except to be fair—but how could a man be uninfluenced? If the railroads could present an official with an automobile, what would be said of it? Why should shippers do so without criticism? The whole thing looks bad on the very face of it. It is regrettable, for in Iowa we have generally managed to keep pretty clean.

The *Railway Age Gazette* does not pretend to know either whether Mr. Thorne has a new automobile or where he got it. But suppose that he has one and that he did accept it from the shippers, is there anything wrong about that? A virtuous man like Mr. Thorne has a great advantage over the wicked. He can do anything that he likes, and it becomes virtuous because he does it. Not only can he make the worse appear the better part, but the worse part automatically becomes the better part when he takes it. Besides, when the chairman of a railroad commission has appeared as an attorney for shippers in rate cases before they have given him an automobile how can he be expected to do more for them after they have given him an automobile?

Does an apprenticeship system based on modern methods pay? Ten years ago when attention was being directed to

### Fruitful Results from Apprenticeship

the vital necessity of doing something to recruit the ranks of the mechanical department and insure a good supply of capable well-trained workmen, there were not a few who objected to the expense involved in installing an adequate apprenticeship system and who scoffed at the possibility of retaining graduate apprentices in the service. These criticisms have proved groundless to a large extent on both the Santa Fe and the New York Central Lines, where approved modern apprenticeship methods were first introduced. The results in the case of the New York Central are not so pronounced because of changes which have taken place in the organization since the apprenticeship system was first introduced, and the fact

that this work has not received the same hearty interest and backing from the higher officers as in the earlier days. On the Santa Fe, however, where the fundamental principles of modern apprenticeship have been given a thorough trial, receiving hearty co-operation from President Ripley down, the results are truly remarkable. Of the 479 apprentices graduated in the four years, 1912 to 1916 inclusive, 83 per cent. have remained in the service. Since the reorganization of the apprentice system in 1907, 99 of the graduates have been promoted to responsible positions. More important than these figures, however, is the feeling of loyalty which has been engendered and the improved efficiency throughout the mechanical department—and the work has only fairly begun. The possibilities, if similar methods were to be introduced in all departments of the railway, are practically limitless. It is greatly to be regretted, however, that railway officers generally cannot visualize these possibilities and are so slow in taking aggressive steps to promote the training and selection of their men.

### WHO WANTS A STRIKE?

**S**POKESMEN for the labor brotherhoods, desiring to throw the responsibility for a possible strike of train and engine employees upon the railroad companies, are indulging in some curious mental contortions in their endeavor to explain their refusal to submit the wage controversy to an impartial arbitration. Their position before the public is seriously weakened, however, by the fact that while criticizing the railroads' proposals for a settlement, they have offered no alternative plan but a strike unless their demands are granted in full.

A statement issued by the Transportation Brotherhoods' Publicity Bureau declares that the proposal of the railways to refer the question to the Interstate Commerce Commission means "anything for delay" and that "railroad officials well know that the Interstate Commerce Commission has no power to fix the rate of wages after an investigation of the subject and the whole controversy would, after an investigation, be in the same condition as it is at the present moment." This is hardly a satisfactory explanation of their rejection of the proposal "that we (the railways and the employees) jointly request Congress to take such action as may be necessary to enable the commission to consider and promptly dispose of the questions involved."

An editorial in *The Railroad Trainman* intimates that the railroads are desirous of bringing the controversy to the point of a strike, and says that "they stand to win by either of two ways, first, if the men win, by teaching the public the need for uninterrupted railroad service for which the public must pay, or by defeating the men, destroying their organizations temporarily, and saving the cost of a strike by a readjustment of wages and service conditions." If this is true, the railroads are in a rather enviable position. According to this version, they have two chances to win, the brotherhoods have one chance, but the public, which would have to suffer the effects of a strike in either event, and to stand an increase in rates if the men should win, has no chance at all.

If the railroads could have any confidence that an advance in rates would be the certain result of an increase in wages, they would view the prospect with equanimity, but in view of the difficulty they have experienced in securing a slight increase in rates as a partial offset to the advances in wages and other expenses during the past 10 years, it would seem to be the safer policy for them to try to win the strike. If they should lose they could not meet the increased expense by higher rates except with the approval of the Interstate Commerce Commission.

The 300,000 train employees would profit by an increase of wages, whether secured as the result of a strike or of arbitration, considerably more than they would have to pay as

their share of a general increase of freight or passenger rates. They are not worrying about the increase in rates or the effect on the public of a strike. They believe that their chances for winning are greater if the controversy is to be settled by force than if it is to be adjusted by some impartial body.

This being the case, unless they advance some other alternative, the responsibility for a strike will rest squarely upon those who propose a strike, not upon those who propose a peaceful settlement.

The Railroad Trainman expresses the belief that "the proposition made by the railroads was not offered in good faith," and that "if a proposition had been made by the men to arbitrate under the Newlands law, the railroad companies would have refused it." If the confidence of the brotherhoods in this belief had been strong enough to induce them to make such a proposal they might have been able to put the railroads in the hole they are now trying to dig for them, but the fact remains they did not; that the railroads did propose arbitration under the Newlands law, and that the brotherhoods rejected it and proposed only a strike.

The brotherhood organ also says: "The owners of the railways have a perfect right to participate in the earnings on a fair and equitable basis, but they have no right to fix that fair and equitable profit on a basis that is manifestly unjust to the employees." If the present basis is "manifestly unjust" it should not be difficult for the employees to convince either the Interstate Commerce Commission or a board of arbitration that such is the fact.

### THE PUBLIC'S ATTITUDE TOWARD GOVERNMENT MANAGEMENT

**I**T is usually essential to the successful management of any kind of a property or business that those who own a controlling interest in it shall know the manner and results of its management, and shall take an active interest in them. In order to get good management they must hold the managers responsible for results, and they cannot do this if they do not know what the results are. One of the principal reasons why some of the railways of the United States have been badly managed has been that their stockholders have been too uninformed or have not acted on the information they have had, thus giving the managers opportunity to disregard the duties of their trusteeship.

As little as the stockholders of many private railways know about the affairs of their companies, they know a great deal more about them than the public usually knows about the results of railways which it owns. When railways are owned and operated by private companies the government usually will at least compel their managements to so keep their accounts and make their reports that anybody who will devote some time to the examination of their operating and financial statistics can tell whether or not they are being grossly mismanaged, and whether they are making or losing money. When railways are owned and managed by the government, on the other hand, the government is quite likely to so keep their accounts and make their reports that even those experienced in the study of railway affairs may have difficulty in ascertaining the exact results secured, and that a large majority of the public will have wrong impressions, and misleading information or none, regarding them.

The government railways of Canada afford striking evidence in support of these views. The first one-half of an article on the results of government management in that country is published in this issue of the *Railway Age Gazette*. The second one-half will be published next week. The data presented show conclusively that the Canadian government railways always have been, and are now, an utter failure from a financial point of view, and have inflicted enormous losses upon the public. The official reports furnish ample



basis for the demonstration of this proposition. But they do not tell the whole truth. They do not disclose how much interest the government has to pay on the capital belonging to the public which has been invested in the railways. Consequently, the only point regarding the results of these railways, and especially of the Intercolonial, the oldest of the large government lines, to which Canadian public men and the most intelligent part of the public seem to give any attention, is as to whether the road earns its operating expenses. And, although they do pay some attention to the earnings and operating expenses, it is a remarkable fact that the public men and the people of Canada, and even many of the newspapers, do not seem even to know that the road does not earn even its operating expenses. For example, the *Toronto World* ought to be well informed, and yet it said in an editorial in its issue for June 14, 1916, that the Intercolonial has "given good service at low rates and more than pays operating expenses." Now, the fact is that, as shown in the article published elsewhere in this issue, the Intercolonial during 47 years of government management failed by \$9,565,000 to earn its bare operating expenses, and that it has continued down to the present time to fail to do so. It has had operating deficits in each of the last three years, and its operating deficit during the last 10 years has been \$1,352,156. The *Toronto World* also says: "Everyone knows the Intercolonial was built as a military road for military purposes, and was never expected to pay commercially." This statement is simply not true. It is demonstrable by the official documents that the Intercolonial was not built as a military road. Even if it had been the so-called "military purposes" would long since have ceased to exist, and if the management had not been a mixture of low politics and incompetency it would many years ago have begun to be handled in an entirely different manner.

These statements are not made in criticism of the officers who are now, or have been in the past, in direct charge of the operation of the property. Many of them have been conscientious and able railway men. The present general manager, F. P. Gutelius, is such a railway man. The failure of government management in Canada has been due to the political and other demoralizing influences whose presence seems to be unavoidable in the case of commercial concerns managed by democratic governments.

The ignorance and indifference shown by the public regarding business enterprises managed by governments is attributable, doubtless, to many causes, but among them are two of leading importance. First, the standard of intelligence of the public as a whole is almost sure to be lower than that of the stockholders of a private company. When a man acquires stock in a railway it is a pretty sure sign that in thrift and intelligence he has risen above the level of a large majority of the people. Second, the individual members of the public, even though equal in intelligence to the individual stockholders of a railway, are not likely to take nearly as much interest in the affairs of a government railway as the stockholders are likely to take in those of a private railway. The stockholders of a private railway are a comparatively small number of people, and they receive, or hope to receive, dividends from it, and may at the same time suffer losses by it. The owners of a government railway are millions of people, and any benefits it confers on them, or losses it causes them are spread over all the people, are indirect and general, and, therefore, while none the less real, are of such a nature as not to excite much interest or concern on the part of individuals.

The main reason why the business of democracies usually is badly managed is that those who have ultimate control of the government—that is, the great majority of the people themselves—are ignorant or apathetic, or both, regarding public affairs. Since they are ignorant, or apathetic, or both,

regarding other public affairs, how can it rationally be assumed that they will not be regarding the management of government railways? And if they are ignorant, or apathetic, or both, regarding government management, then the government railways are sure to be badly managed.

## THE TRANSPORTATION OF THE NATIONAL GUARD

THE part played by the railroads in the mobilization of the National Guard, while perhaps not entirely free from imperfections, nevertheless seems to have compared very favorably with the work of other factors in the movement. While there were not always enough sleeping cars available for the use of the troops when desired, the same statement can be made as to such important items of a soldier's equipment as shoes, guns and horses, and if some of the published comments by officers of the militia on the comfort and pleasure of their journey to Texas in July did not exactly correspond with the portrayal of the charms of summer vacation travel to the mountains or the seashore in railroad advertising literature some of the comments of the men on Uncle Sam's cooking would not look well on the posters used in front of the army recruiting stations.

Some of the newspapers were able to make very effective use in editorials and cartoons of the contrast between the summer tourist riding in electric-lighted Pullmans and the militia traveling in day coaches, but the government that has charge of such matters evidently differentiates between a vacation and a war because the regulations of the war department governing the transportation of troops by rail do not provide for the use of standard Pullman cars (except for officers), but specify tourist cars and day coaches. Article 123 of the department regulations says: "If tourist sleepers are not readily available, coaches should be substituted, on the basis of one man to each double seat, and an endeavor made to secure the tourist sleepers and transfer the men thereto at a convenient place en route."

This was exactly the method followed. As there were only between 500 and 600 tourist sleepers available in the country, and on the basis of 40 men to a car it would take five or six weeks to transport 120,000 men to the border, allowing an average of six days for the round trip from the Eastern and Central States, the mobilization would have proceeded rather slowly without the use of day coaches.

In the emergency which was believed to exist when the troops were first called out there was not sufficient time for assembling, at the points where they were needed, cars scattered all over the country, and the quartermasters and the railroads simply did the best they could. In a few days all of the available tourist cars were on their way to Texas and it was necessary again to resort to the use of day coaches for a part of the men, at least from the initial point to some intermediate place en route where they could be transferred to the cars being deadheaded back. In this way the most effective use was made of the available equipment, and most of the soldiers had sleeping cars for at least part of their trip.

In one or two cases there were delays in getting started, owing to the difficulty of assembling tourist cars. In the instance of one Illinois regiment there were cars in the vicinity of Springfield, but the quartermaster-general's department at Washington, which reserved to itself the ordering of tourist cars, for some reason overlooked them and ordered cars from Chicago instead, while the regiment slept in the streets.

The outstanding feature of the situation has been the remarkable facility with which the entire movement has been handled, both by the railroads and by the war department, as compared with the experience during the Spanish-American war, and considering the short notice on which it was undertaken. It is a noteworthy fact that the criticisms which have been published have come from state officers and political

colonels rather than from regular army officers. In fact the war department has declared these criticisms "entirely unjustified." The railroads have displayed a degree of preparedness so far as organization is concerned, which has been in marked contrast with that of either the federal government or of the state militia.

President Wilson has expressed his public appreciation of the work of the American Railway Association special committee on co-operation with the military authorities, which promptly placed at the disposal of the war department a complete organization of operating men to assist it in co-ordinating the facilities of the various roads. Little has been said, however, about the important work by the military committees of the railroad passenger associations and the quartermaster-general's department in systematizing the business relations between the railroads and the government concerning the handling of military transportation. As briefly outlined in last week's issue, a complete military agreement had been reached between the railroads and the government, which practically provides for a pool of the resources of the railroads for the transportation of troops, and under which detailed routes have been worked out in advance so as to give each road its equitable share in the traffic and at the same time insure the most direct routes, a reduction from the lowest combination of land grant rates and the avoidance of congestion either at terminals or at junction points. When the emergency arose members of the military committees went to Washington and completed the arrangements in a very short time. The railroads also, in most cases, gave the troop trains right of way over other trains, and many of them greatly curtailed their Fourth of July and other excursion, or special service, in order to give preference to the military traffic.

The real deficiencies in the preparations are not to be ascribed to the trained railroad and army officers who have been called upon to make a public demonstration of their ability, but to the pork-barrel politics which has interfered with carrying out the recommendations of those whose business it was to know what was needed and to the indifference of a public that has allowed such politics to prevail in its government.

### NEW BOOKS

*Application of Agency Tariffs.* By John P. Curran, LL.B., of the Central Freight Association, Chicago. 420 pages, 6 in. by 9 in. Bound in paper. Published by LaSalle Extension University, Chicago.

One of the most important duties of the traffic man is to be familiar with the application of some part of the large number of freight tariffs, applicable upon traffic moving between various points, to his own particular work. This publication is devoted to the agency tariffs published by the various tariff-issuing bureaus throughout the country, and gives in concise form, arranged so that it can be readily located, the number and the description or name of each tariff issued by the various agencies, together with a statement of the points to which they apply. The author states in the preface that as to local tariffs it is not possible to put into permanent form any considerable amount of information relative to the application of each tariff, but that as to the agency tariffs, applying between competitive points, it is possible to give information relative to the application with some degree of accuracy, because they are usually given a series number, which is continued with each reissue by the use of a letter appearing before or after the number. Information given in the book is divided into two classes. When it is desired to know the scope of tariffs issued by some specific association the reference is found in Section A; when it is desired to know when agency tariffs apply from a specific state, regardless of what association issues the publication, the tariffs may be located by the list in Section B.

## Letters to the Editor

### END SLOPES FOR HOPPER CARS

PONTIAC, Mich.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The fundamental of a dump car is to dump; but many railway officers content themselves with cars which are partial dumpers, when for the same money they could have complete dumpers. It is just a matter of placing the end slopes at the proper angle of inclination, so that the entire load will run out when the doors are opened.

By examining the general run of coal cars in service it will be found that their end slopes are only 30 deg. from the horizontal. Watch the unloading of such cars; from two to eight men are employed, and from the moment they begin on a car until they are through with it they consume 40 min.—the 8 men taking 5 min., or the 2 men 20 min. Multiply this 40 min. for the one car by the thousands of unloadings which occur daily on the railroads throughout the country and the waste of time and money is seen to be enormous.

By simply steepening the end slopes this time can be reduced to one minute per car; but so long has this faulty design been adhered to, that the 30 deg. end slope is accepted by the majority of railway officers as inspired. However, it can be changed, and it has been changed, notably on a large number of cars which have been running on the Chesapeake & Ohio for more than two years. These cars have their end slopes 20 deg. steeper, or 50 deg. from the horizontal, notwithstanding the fact that car builders and others said it could not be done. They have a rated capacity of 70 tons, and one of them has been loaded with 79.9 tons of soft coal, thus proving that the cubic capacity was more than ample for the rating.

FRANK S. INGOLDSBY.

### RAILWAY CLEARING HOUSE

CHICAGO, Ill.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Referring to the editorial comment on page 1 of the issue of the *Railway Age Gazette* of July 7, 1916, concerning the above subject, I beg to say that the argument advanced by Mr. Seger as the reason for his opposition to the establishment of a clearing house, to which you refer, is comparatively a new one. In fact, Mr. Seger is the only person, to my knowledge, who has mentioned it and I think I would have heard of it if others who have considered the subject had employed it, as I have been on the committee of the Society of Railway Financial Officers which has had consideration of this subject for many years, which committee has held joint sessions with committees representing the accounting officers.

It was at such a joint meeting held in New York a few months ago that Mr. Seger mentioned this argument, but it was considered of such trifling importance at that time that the members of the committee of the Society of Railway Financial Officers did not consider it important enough for consideration. Besides, Mr. Seger admitted at that time that he had not seen or studied the clearing house plan, and our committee, wishing to avoid as much argument as possible, depended upon the merits of the plan to win its way.

Mr. Seger has still evidently omitted to study the clearing house plan as developed by the committee of the Society of Railway Financial Officers, or he would not have used such an argument. Those plans provide for the establishment by the railroad companies of a clearing house to be under the control and management of the railroads, and ample provisions made for revising and improving the same in any



way found necessary. In other words, it is to be a creature of the roads, operated for the benefit of the roads, and is not an "outside" institution. To argue, therefore, that the clearing house takes from the railroad companies the control of cash seems to me as far fetched.

If this argument had merit, it certainly would have been discovered earlier by certain persons who have strenuously opposed the clearing house, and when every objection has been met, they have been hard pressed for an excuse for their opposition.

In view of the economy and benefit the railroads would receive from the establishment of a clearing house, it is unfortunate that it cannot speedily be established, and on account of opposition of certain individuals who are in a position to block the efforts, it seems possible that its realization may be postponed as you surmise.

I may add that the family clearing house plan as suggested in the resolution of the joint committee referred to on page 9 of your last issue, is now in operation with the Pennsylvania and New York Central Lines and possibly others, to their entire satisfaction, I understand. If it is advantageous to those systems, it certainly would be if extended to include all roads.

BYRON CASSELL,

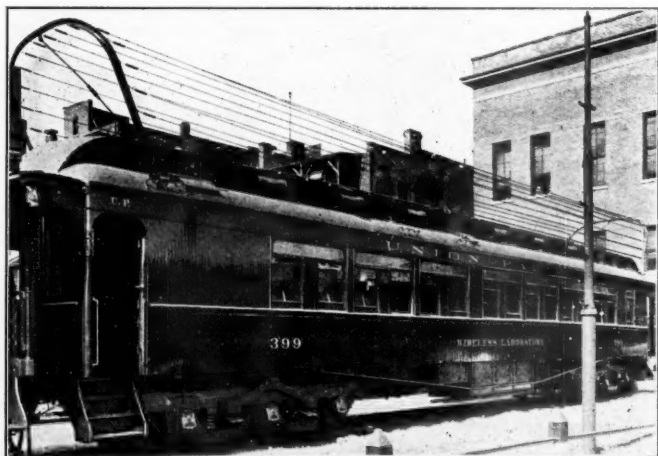
Treasurer and Assistant Secretary, Chicago, Indianapolis & Louisville.

## WIRELESS ON THE UNION PACIFIC

OMAHA, Nebr.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have read with pleasure the report of the meeting of the Association of Railway Telegraph Superintendents in the *Railway Age Gazette* of June 30. I was particularly interested in the portion relating to wireless telegraph and telephone communication, since I have been experimenting along these lines for 10 years. You are undoubtedly aware that the Union Pacific was the first road to suggest and carry out this means of communication on a railroad and has con-



Car Fitted for Wireless Experiments on the Union Pacific

ducted experiments, the value of which is immense if the railroads could be made to see it. This is sometimes difficult, however, on account of the lack of precedent and money to spend for such work.

The accompanying illustration shows our "Communication Car," just completed. It is a converted diner and is peculiarly fitted for experimental work, both in telegraph and telephone service with and without wires. We have a station on the roof of the headquarter's building in Omaha and one ready for operation at Grand Island, with a prospective one at North Platte, Nebr.

The only error so far discovered in the construction of this car is the use of turnbuckles in compression instead of

tension for placing the antennae under tension. This will be changed later, these pieces having been made with the intention of fastening them at the ends of the car, but it was found impossible to secure a satisfactory fastening.

FREDERICK H. MILLINER.

## NOISE NUISANCE ON SLEEPING CARS

PORTLAND, Ore.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Referring to the letters published in the *Railway Age Gazette* May 19 and June 2 on the subject: "Noise Nuisance," I feel that it is my duty to offer a few suggestions, which, if carried out by the traveling public, will diminish complaints, without the least inconvenience on the part of the passenger. I am working equally hard to make a success as a porter as my superintendent is working to make a success of his position. If the arriving and departing passengers would maintain quiet at night, our troubles and theirs would be over.

1. Should you have no berth reserved when entering car at night, quietly inform the porter who will immediately summon the conductor, or if the porter is waiting upon another passenger, wait patiently until he can get to you. Remember when you go to a theatre how patiently you wait for the usher to direct you to your seat. Your waiting does not indicate that you are not able to find your seat, but the fact that others are present, and you do not want to disturb them—so you will wait for the usher, and I beg you to give the sleeping car porter similar consideration.

2. Should you desire to use the upper berth for your clothing, don't wait until the porter reaches the far end of the car and then shout, "Porter, will this upper be occupied?" Should it fall to your unfortunate lot to leave the car between the early hours of 3 and 6 a. m. and you should find it a bit difficult to locate your shoes or baggage, summon the porter; it might be that he has taken the grip that you left in the aisle upon retiring, and placed it in some upper berth, or, it might be that some one in passing has accidentally kicked your shoe back out of your sight and reach. Should you have need to ring the bell during the night, remember the annunciator is located at the men's end of the car. Should the porter be at the opposite end, it would be necessary for him to pass your berth on his way to see who was in need of his service. You look out and see that it is the porter, don't shout to him. Just wait, he will return as soon as he has consulted the annunciator.

3. When boarding a sleeper after others have retired, kindly refrain from loud talking. When two or more passengers board a car together, they invariably congregate in the middle of the car and begin to ask each other, "What berth have you?" "What time are you going to get up?" "I left a call for 7 a. m., get up and have breakfast with me," and by that time they have awakened every one.

LEE ANDERSON,

Porter, The Pullman Co.

## RELATIVE EFFICIENCY OF GERMAN AND AMERICAN RAILWAYS

AUSTIN, Tex.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

H. W. Faus' article on relative efficiency of American and German railways in the *Railway Age Gazette* of June 16 is the most conclusive presentation of the subject I have seen. The argument on the effect of the average length of haul on freight receipts is particularly appropriate.

I am sure the writer will welcome any justifiable exception to his statements; so I submit a couple of minor corrections.

Mr. Faus speaks in a derogatory way of German freight cars—seems to think them out of date and inefficient. A close

study of their design, construction and manner of use, will, I think, put this matter in an entirely different light. As to couplers, the screw-coupling used on the Continent is very efficient, although apparently not quite as safe as our automatic coupler. In proportion to the car capacity the screw-coupling is much lighter. As to car capacity, a German railway official made me this explanation: "If it is desired to move 40 tons, on four axles, what matters it whether we have a single car platform, or two platforms connected by coupling? Except in minerals, average carloads are small, and we get a better availability of loading capacity with small cars than with large." This seems a reasonable proposition. In 1911 the average loading of German cars was about 9 tons, their average capacity 14 tons; per cent utilized 64 per cent; in 1911 the average loading of American cars was about 13 tons, average capacity 37 tons; per cent utilized 36 per cent. Other factors enter in, of course, but the argument for high capacity merchandise cars is not very strong from a railroad efficiency standpoint. I may remark that the Bureau of Railway Economics computes the average carrying capacity per German freight car as 15.7 tons instead of 14 tons.

The short time allowance given German shippers is certainly in the direction of efficiency. Every American railway manager would wish that he could abridge the free time now allowed shippers. Generally speaking, these allowances are much longer than necessary. If we assume that the average haul is 150 miles, and the average daily mileage per car is 25, then it takes six days to complete a movement. If two days of this is now given as free time, and this free time were cut in two, there would be an apparent reduction of one-sixth in the number of cars to transport the country's business. One-sixth of 2,400,000 freight cars is 400,000, representing an investment of some \$300,000,000 and 3,000 miles of track and yard room. I do not contend that the cure for this inefficiency lies with our managers; it probably lies with our regulatory bodies, and with a more far-sighted and co-operative attitude on the part of the larger shipping associations. But in this very particular, Mr. Faus has proven an efficiency, not an inefficiency, of German operation.

In regard to capitalization, Mr. Faus makes the broad statement that the Germans burden their capital accounts with items that are really operating expenses, and attempts to prove his assertion by saying the German capitalization per mile has increased \$20,000 in the last 21 years. I do not believe there is much merit to this contention. Net capitalization per mile of line has increased \$12,000 in the United States in the last 20 years. Much of this is due to heavier standards of construction, double tracking and terminals. The same causes have been operative in Germany, where 40 per cent of the mileage is double tracked, and where there are six-tenths of a mile of yard tracks, etc., for each mile of line. The corresponding figures for the United States are: 10 per cent double tracked, and less than four-tenths of a mile yard track, etc., for each mile of line. That \$20,000 per mile is not an undue increase in 21 years is shown by the valuations placed upon railroads in Texas in this period. In 1894 the roads of this state were valued at \$15,926 per mile. This was a careful inventory and engineering estimate, based on current costs for construction. It was a fair value for the character of roads traversing that region at that time and included no water, nor fancy land values. The Railroad Commission of Texas has kept up the valuations of the roads year by year, as new lines were built and old ones improved. The valuation in 1915 was \$26,304 a mile, or an increase of \$10,378 in 21 years. There is no double track in Texas; and the traffic density of Germany is about four times as much per mile of line as that of Texas. The areas are about the same.

In comparing costs per mile in America and Europe, we must constantly bear in mind the favorable treatment ac-

corded railroads here in the matter of donated or cheap lands, with broad right of way. In Europe the cost of condemnation (including structures removed, cost of highway crossings and protection, etc.), has been very high, and the construction has been made more expensive due to the use of narrow right of way.

I do not believe Mr. Faus can maintain that, on the average, American railroads have entailed a greater construction cost than German roads, whether on the mile of line, or mile of track basis. German rail is generally heavier; tie-plates are more substantial and more generally used; ballasting is generally superior, also bridging, there being less timber trestles. American materials have been cheaper; this, and the use of more wholesale construction methods, largely offsetting the higher labor cost.

With these small amendments, I heartily endorse Mr. Faus' analysis, and think it a fair statement of the relative efficiency of railroading in the two countries.

It would be interesting to see a similarly handled comparison of English and American, or English and German efficiencies.

R. EMERSON.

## THE CLERK PROBLEM

MICHIGAN.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

May I take a few exceptions to the letter in your issue of March 17 signed "One of the Clerks?"

I do not think the statement that railroad clerks as a class are "in a blind alley" is due to any other reason than that the average clerk works the stipulated number of hours, and performs only that amount of work that he has to in order to hold his job.

The ambitious railroad clerk will succeed, and the higher he aims the greater his reward; if a clerk puts the same amount of study into his duties, as he would have to in order to qualify as a steam shovel man, his annual income would compare favorably.

Three and a half years ago I was getting into the rut myself, and had practically decided to take up a correspondence course; but while thinking it over, I decided to put the same amount of energy and enthusiasm into my work that I would have to put into my course. My salary was \$60 a month, and I was in "a blind alley." My salary is \$120 a month now, and although I see nothing definite before me in the way of promotion, I am not at all prepared to say I have reached my limit.

Possibly I am wrong, but I believe many of the higher officers of the railroads were clerks once, with "nothing ahead of them" except ambition and the power to use the brains that God gave them!

ANOTHER CLERK.

RAILWAY EXTENSIONS IN CAUCASIA.—The railway extension from Julfa, on the river Araxes, to Tabreez has been completed. The gage of the new railway, which is 93 miles long, is the same as that of the Russian railway system, namely 5 ft. The railway is under Russian control and management, and is not at present intended for the conveyance of passengers. The track follows between Julfa and Tabreez the line of the Indo-European telegraph system to India. From the town of Sophian, about 25 miles from the Tabreez, a branch of the railway has already been completed to Lake Urumiah, around which is one of the richest districts of Persia. This railway, with its branch line, will doubtless cause an enormous development through all this part of Persia. Much new land will be opened up to agriculture, and various mines, chiefly copper and wolfram, will be worked which have not been developed because of transportation difficulties. The railway may be extended to Teheran, thence south-east to Ispahan, and into Baluchistan, whence it could connect up at Nushki with the railway system of British India.



# Failure of Government Ownership in Canada\*

History of the Results of Operation of the Intercolonial  
for Forty-Seven Years Shows Bankrupt Condition

By Samuel O. Dunn

## PART I

THE subject of government ownership of railways is of perennial interest in the United States. Discussions of the subject usually move along two lines. One class of speakers and writers base their reasoning on certain assumptions as to the honesty, public spirit, and efficiency which would characterize a railway management representing the public. Their conclusions naturally correspond with their assumptions. Another class analyze the results of government management in one or a few countries, find them good or bad, and base on them conclusions as to whether the results in the United States would be good or bad.

Both of these kinds of reasoning have the same defect. They do not take enough account of the conditions in any given country under which a railway policy must be carried out. These conditions are of various kinds, physical economic, political, and so on; and they largely determine the results of railway management and operation under either private or public ownership.

One of the mistakes most often made is that of ignoring the political conditions under which government ownership is, or would be, tried. The question is often treated as if it were merely one of economics. It is one both of economics and of political science. The efficiency and economy of a government are determined largely by how much it is influenced by politics of the low kind; and the influence of this kind of politics depends on the organization of the government and the attitude of the people. As the efficiency of a government as a whole must depend largely on the part played by politics, the way its railway department would be managed would necessarily be determined largely by the same cause.

The results of government railway management being largely determined by conditions, and especially by political conditions, the experience with government management in a single country, where the conditions are similar to those in the United States, may throw more light on the question in this country than much abstract reasoning, or than large amounts of data drawn from the experience of countries where the conditions are widely different.

There is no country whose conditions, physical, economic, and political, are more similar to those of the United States than those of Canada. The Dominion is an adjacent part of the same continent. The larger part of it is extremely like the conterminous larger part of the United States. Its natural resources, industries, and products are similar. Both countries are inhabited mainly by descendants of the peoples of Northern Europe, although this point might be pressed too far. With its big French population, Canada has a large representation of the Latin races. But the ancestries of the people of the United States are not all traceable to Northern Europe; and the French in Canada have as much political capacity as our many voters from Southern Europe, not to mention our millions of negroes. The government of the United States is a democratic republic. That of Canada is not a republic in form, but its people are as self-governing and its institutions are as democratic in fact as those of any country. There are considerable economic differences; but

these are unimportant in comparison with the points of resemblance.

The results of government ownership and management of railways in Canada should, therefore, afford the most reliable indication available as to what would be the results in the United States. Canada has tried public ownership and her experience has been long and on a large scale. The Dominion has owned the Intercolonial Railway for forty-seven years, and certain of the colonial governments owned parts of it before. It has owned the Prince Edward Island Railway for forty-three years, and acquired it from the government of the island. The Intercolonial and Prince Edward Island have 1,736 miles of line; and the Dominion has recently built and is operating the National Transcontinental Railway, which has 2,067 miles. The Canadian government railways now have, combined, 3,803 miles of line.

The construction, by the government, of the National Transcontinental led to a scandal. The plan for its building was adopted in 1903. It was to run from Moncton to Quebec, and from Quebec to Winnipeg, and on its completion was to be leased to the Grand Trunk Pacific for 3 per cent on its cost of construction. The minister of finance presented to parliament a "liberal" estimate. Eighteen hundred miles were to cost \$61,415,000, or \$34,083 a mile. A government commission was created to handle the work. On September 30, 1911, the expenditures had reached \$109,000,000; by the end of 1914 no less than \$173,000,000, or about \$99,000 a mile, had been spent; and at latest reports the total was about \$200,000,000.

A new government commission was appointed in 1912 to investigate the work of the original government commission. It reported in 1914 that there had been gross mismanagement and extravagance, and the waste of many millions of dollars; and the Grand Trunk Pacific refused to take the property over for operation because it could not afford to pay 3 per cent on its excessive cost.

The reports regarding the mismanagement of the construction of the National Transcontinental attracted much attention in the United States. As a matter of fact, the results of government construction of the National Transcontinental are typical of the results of public ownership in Canada ever since the various parts of the Intercolonial were acquired by the Dominion forty-seven years ago.

The Intercolonial, the Prince Edward Island, and the National Transcontinental all failed to earn their operating expenses in the year ended on June 30, 1915, their combined deficit from operation being \$350,000. A stranger to the facts might attribute the results in 1915 partly to the effects of the war in Europe. For that reason, in the following study of government management in Canada, the statistics used are chiefly those for the year ended on June 30, 1914. The most attention has been given to the Intercolonial, because it is the only large road on the North American continent which has long been managed by a government.

The Intercolonial in 1914 had 1,457 miles of line. Its main lines run from Sydney and Halifax to Moncton, and thence to Quebec; and it serves the provinces of Nova Scotia, New Brunswick and Quebec. The Prince Edward Island is a narrow-gauge road of 279 miles, serving the island of

\*Reprinted by permission from *The Journal of Political Economy*, July, 1916.

that name, and is managed by the same organization. The acquisition of the Intercolonial was provided for by the act of federation of July 1, 1867. It was originally purchased and developed by the government mainly to bind together more firmly the French and English provinces. In 1876 it had 348 miles in New Brunswick, 222 miles in Nova Scotia and 375 miles which had been constructed by the government from Moncton, New Brunswick, to Rivière du Loup, Quebec—a total of 945 miles. From Rivière du Loup to the city of Quebec it leased a line from the Grand Trunk. The Prince Edward Island became a part of the government system when the island came into the confederation on July 1, 1873.

One of the arguments advanced for government ownership in the United States is that under it the profits made by the railways would be received by the public instead of going to private capitalists. Those who reason thus often forget that while railway companies, if successful, yield profits to private

idea as to what the losses actually have been. No one heretofore has gone thoroughly into the matter. Many know that in some years the roads have not earned their operating expenses, but that in other years the Intercolonial has done so. Therefore, most of them apparently believe that the total losses incurred, while considerable, have not been very great. No impression could be more erroneous. The total losses sustained have been enormous.

The combined cost to June 30, 1914, of the Intercolonial and the Prince Edward Island, as shown by the official reports, was \$112,351,000, or \$64,718 per mile. The cost per mile of the Intercolonial had been \$70,815, and of the Prince Edward Island, \$31,973.\* Computed in a more correct way, their total cost to the public had been \$381,000,000, or \$219,000 per mile. This figure includes expenses and interest which they had failed to earn, but nothing for the taxes which the public would have collected from them if they had been privately owned. These railways are almost entirely

TABLE I—INTERCOLONIAL RAILWAY

Years*	Operating revenue	Operating expenses	Net earnings or operating deficit (—)	Official cost of construction	Actual cost to the public
1867	.....	.....	.....	\$10,766,725.54	\$10,766,726.00
1868	\$420,752.58	\$359,961.08	\$60,791.50	11,250,079.19	11,619,957.00
1869	455,022.76	387,548.47	67,474.29	11,532,694.37	12,299,896.00
1870	471,245.09	445,208.75	26,036.34	13,262,075.86	14,495,237.00
1871	565,713.52	442,993.31	122,720.21	16,178,857.99	17,869,108.00
1872	622,900.56	595,076.22	27,824.34	21,309,999.50	23,687,190.00
1873	703,458.26	1,011,892.60	—308,434.34	26,511,449.87	30,144,562.00
1874	893,430.17	1,847,175.24	—953,745.07	30,126,348.68	35,918,988.00
1875	861,593.43	1,532,589.62	—670,996.19	33,552,448.23	41,452,843.00
1876	848,861.46	1,277,197.79	—428,336.33	34,660,769.82	44,647,615.00
1877	1,154,445.35	1,661,673.55	—507,228.20	35,979,122.01	48,259,100.00
1878	1,378,946.78	1,816,273.56	—437,326.78	36,387,938.75	51,030,608.00
1879	1,294,009.69	2,010,183.22	—716,083.53	36,614,577.94	54,014,555.00
1880	1,506,298.48	1,603,439.71	—97,131.23	38,662,592.54	58,320,283.00
1881	1,760,393.92	1,759,851.27	542.65	39,271,325.34	61,287,699.00
1882	2,079,262.66	2,069,657.45	9,605.18	39,856,894.13	64,287,699.00
1883	2,370,910.10	2,360,373.27	17,547.18	41,473,527.09	68,458,293.00
1884	2,384,414.92	2,377,433.62	6,981.30	44,163,216.58	73,879,323.00
1885	2,441,203.66	2,519,751.56	—78,547.90	45,410,223.03	78,160,050.00
1886	2,450,093.88	2,583,999.67	—133,905.79	46,090,579.37	82,100,714.00
1887	2,660,116.93	2,922,369.62	—262,252.69	47,014,309.44	86,570,726.00
1888	2,983,336.05	3,366,781.74	—383,445.69	48,727,292.73	92,129,984.00
1889	2,967,801.00	3,244,647.73	—276,846.73	51,340,586.76	98,705,325.00
1890	3,012,739.87	3,560,575.74	—547,835.87	53,310,431.46	105,471,219.00
1891	2,977,395.38	3,662,341.94	—684,946.56	54,260,512.44	111,325,096.00
1892	2,945,441.97	3,439,377.00	—493,935.03	54,577,296.40	116,588,819.00
1893	3,065,499.09	3,045,317.50	20,181.59	54,874,186.83	121,529,080.00
1894	2,987,510.17	2,981,671.98	5,838.29	55,311,720.61	126,821,939.00
1895	2,940,717.95	2,936,902.74	3,815.21	55,638,755.12	132,218,037.00
1896	2,957,670.10	3,012,827.62	—55,157.52	55,897,860.35	137,821,051.00
1897	2,866,028.02	2,925,968.67	—59,940.65	56,046,972.87	143,542,947.00
1898	3,117,669.85	3,327,648.51	—209,978.66	56,299,729.67	149,747,401.00
1899	3,738,331.44	3,675,686.21	62,645.43	57,381,659.61	156,756,582.00
1900	4,552,071.71	4,431,404.69	120,667.02	60,637,007.81	166,161,526.00
1901	4,972,235.87	5,460,404.64	—488,168.77	64,270,844.38	176,930,011.00
1902	5,671,385.91	5,574,563.30	96,822.61	68,897,685.43	188,537,229.00
1903	6,324,323.72	6,196,653.19	127,670.53	71,151,952.11	198,205,314.00
1904	6,339,231.43	7,239,982.04	—900,750.61	73,032,808.71	208,915,135.00
1905	7,683,522.83	8,508,826.75	—1,725,303.92	77,770,430.64	223,734,666.00
1906	7,643,829.90	7,881,914.36	61,915.54	81,535,601.54	236,387,308.00
1907	6,248,311.00	6,030,171.83	218,139.17	83,041,810.80	247,130,870.00
1908	9,173,558.80	9,157,435.53	16,123.27	87,424,304.00	261,382,476.00
1909	8,527,069.46	9,328,021.55	—800,952.09	91,291,536.00	276,505,959.00
1910	9,268,234.99	8,645,070.33	623,164.66	92,569,945.00	288,221,441.00
1911	9,863,783.40	9,595,976.79	267,806.61	93,332,814.00	300,245,361.00
1912	10,593,785.84	10,591,035.84	2,750.00	95,141,659.00	314,061,270.00
1913	11,984,482.69	11,984,482.69†	.....	97,533,647.00	329,020,209.00
1914	12,878,549.00	12,878,549.00‡	.....	103,430,848.00	348,089,518.00
Total, Intercolonial Railway, 47 years	\$184,707,592.00	\$194,268,891.00	—\$9,565,036.00	\$103,430,848.00§	\$348,089,518.00
Total, Prince Edward Island Railway, 40 years	7,759,846.00	11,040,128.00	—3,280,282.00	8,920,369.00	32,902,398.00
Total, both government railways, since act of confederation....	192,467,438.00	205,309,019.00	—12,845,318.00	112,351,217.00	380,991,916.00

\* Until 1907, the fiscal year ended on June 30; since that date on March 31. The figures for 1907 as given in the table are for nine months.

† Of this total \$4,500 was paid for "compassionate allowances" by special vote of Parliament.

‡ Of this total \$11,300 was paid for "compassionate allowances" by special vote of Parliament.

§ Total capital cost of the Intercolonial reported in Railway Statistics, published by the department for June 30, 1914. The cost as given in the annual report—\$101,468,073—does not include several construction items carried in separate accounts, but which are included in accounts showing results of operation.

capitalists, they also, unlike state railways, pay taxes to the public. The experience of the world shows that the public, while sure to collect large taxes from private railways, is not certain to receive any profits at all from state railways. Most of them do not earn interest on their investments.

Those of Canada afford an extreme illustration. The statistics which make the deepest impression on the student of their official reports are those showing their heavy losses; and official figures tell but a fraction of the story. The Canadian people and public officials have only the haziest

single-track lines; they are not very well constructed, maintained or equipped; and yet their cost per mile to the public, properly computed, has exceeded the average capitalization of any railways in the world except those of Great Britain. Their losses in the fiscal year 1914, as shown by the official reports, were \$445,000, this being the difference between their expenses and earnings. Properly computed, their losses in

\* Railway Statistics for the Dominion of Canada, published by the Department of Railways and Canals, 1914, p. xii. Capital cost per mile of the Intercolonial, as shown by Railway Statistics for 1915, was \$75,066.



that year were almost \$15,000,000. They can hardly have a physical value exceeding the \$112,000,000, or \$64,718 per mile, which they are officially represented to have cost. Assuming that they are worth this, the difference between their present value and the total amount they have cost the Canadian public is \$268,000,000, or \$154,378 a mile. This represents the absolute loss they have inflicted on the taxpayers of Canada. And this estimate, as already indicated, is really an underestimate, for it makes no allowance for the taxes the government would have collected from them if they had been privately owned. If the Intercolonial and Prince Edward Island were taxed at the same rate as the railways of the United States, their taxes would be \$600,000 a year.

Conclusions so startling should not be stated unaccompanied by the reasoning and method of calculation used in arriving at them. Let us consider in more detail, then, the official figures and the computations which may properly be based upon them.

The management of the Intercolonial by the Dominion government has covered forty-seven years. The official figures show that in twenty-two of these years its earnings have exceeded its operating expenses, its combined net earnings in these years having been \$1,967,000. In the other twenty-five years its operating expenses have exceeded its earnings, and its combined deficits from operation in these years have been over \$11,500,000. Therefore, under government management its net deficit—allowing nothing for taxes or interest—has been \$9,500,000. Still worse has been the plight of the Prince Edward Island. Its operating expenses have exceeded its earnings in every year the government has owned it, its total operating deficit in the years 1875-1914 having amounted to \$3,280,000. The deficits from operation of the two roads under government management have been \$12,800,000. Detailed statistics regarding the cost of construction, the operating expenses, the total earnings, and the net earnings, or deficits from operation, of the Intercolonial are given in columns 1 to 4 of Table I. Totals of similar figures for the Prince Edward Island Railway and for the government roads combined are appended to the table.

The figures of these first four columns, bad as they are, take no account of one of the most important factors to be considered. This is interest charges. Interest is as unavoidable a part of the cost of conducting any business as operating expenses. If the interest charges of a private railway are not earned, it becomes bankrupt. If those of a state railway are not earned, they must be paid from taxes. Nominally, the state railways of Canada have no debt. Actually, the investment represented and the losses incurred by them appear in the government debt and the interest paid on it, for, if the earnings of the railways had sufficed to pay their expenses and interest, the government debt and the interest on it would be proportionately smaller. Therefore, to ascertain approximately the true amount which the government railways have cost the public, we must ascertain not only what has been spent for their construction, but the expenses and interest that they have not earned.

To do this the author has recast the official figures. To the original investment in the Intercolonial and the Prince Edward Island have been added the expenditures for new construction during the first year of public management, and interest on the original investment; and the net earnings or the net deficit from operation in the year—whichever resulted—has been deducted or added. This gives approximately the true cost of each railway to the public at the end of the first year of government management. This true cost has been taken as a new starting point, and made the basis of a similar calculation for the second year; and this process has been repeated year by year for the entire history of each road. The rate of interest used in the calculations is 4 per cent. When the Dominion acquired the railways the rate it had to pay on its general indebtedness was more than this. It ap-

pears in official reports that it paid 5 per cent to the provincial government of Quebec for railway purposes up to 1905, and has paid 4.5 per cent since. The use of an average rate of 4 per cent for the entire period is, therefore, conservative. The results for both roads of the computations thus made are shown in the last column of Table I.

The combined total cost of construction of these lines on June 30, 1914, as officially reported, was \$112,351,217, and the unearned interest on this lost in that year, at 4 per cent, was \$4,494,048. Their combined operating expenses in the same year, as reported in Railway Statistics, the official publication, exceeded their total earnings by \$445,380. (The actual deficits shown in the annual reports of 1913 and 1914, as existing at the end of the fiscal years ending on March 31, were ostensibly wiped out by "compassionate allowances" under special votes of Parliament!) Therefore, in 1914, their total deficit, after adding interest, as indicated by official figures, and allowing nothing for taxes, was \$4,939,788. But this deficit for the year, which is demonstrable by the official figures, is small compared with the deficit shown by the corrected figures. The true total cost of the railways to the end of the fiscal year 1913 was \$360,285,010. Unearned interest on this at 4 per cent for the next year amounts to \$14,411,400. This, together with the deficit from operation, makes a total deficit for the year 1914 of \$14,856,780.

Since the Prince Edward Island Railway is a narrow-gage line, serving only the island of that name, it may be that in its case the obstacles to profitable operation are insuperable. Entirely different is the situation of the Intercolonial. It is a standard-gage road with a large mileage in a territory similar to parts of Eastern Canada and the United States in which privately managed railways operate with profit. Considering the Intercolonial separately, its cost of construction, to 1914, as officially reported, was \$103,430,848, or \$70,815 a mile.<sup>1</sup> The unearned interest on this in 1914 at 4 per cent was \$4,137,233. Its actual deficit from operation was \$291,270. Therefore, its total loss in that year, as demonstrable by the official figures, was \$4,428,503. But its total cost, including its losses, up to the beginning of the fiscal year 1914, amounted to \$348,089,518. Unearned interest on this at 4 per cent was \$13,923,580, which together with the operating deficit makes a total deficit for the year ended June 30, 1914, of \$14,214,850. And this allows nothing for the taxes the road would pay if privately owned. Such is the price the taxpayers of Canada are paying for government ownership!

There is in Intercolonial history a minor illustration of the fact that government ownership is less fatal to financial success than governmental management. The Windsor branch, from Windsor Junction to Windsor, Nova Scotia, is a part of the road. It is thirty-two miles long. Since 1881 it has been leased to operating companies and since 1911 it has been operated under lease by the Canadian Pacific. In every year but one since 1881 the government has received net earnings from it. It is maintained by the Intercolonial, and the government receives as rental one-third of its gross receipts. In the last twenty years the amount of net earnings, after deducting maintenance expenses, has varied from \$15,000 to \$39,000 per year.<sup>2</sup> The net earnings of the branch, in the aggregate, from 1881 to 1914, were \$662,555; and they account for more than one-third of all the net earnings the Intercolonial has made since 1867.

The Canadian state railways are an utter financial failure. The losses are due to low rates, to extravagant management, or to both. Many consider it expedient to make low rates on state railways, even if this causes deficits; and it can be said for this practice that those who pay the rates gain what the taxpayers lose. If the losses are due to wastefulness,

<sup>1</sup>Railway Statistics of the Dominion of Canada, 1914, p. xii.

<sup>2</sup>Annual Report, Department of Railways and Canals, 1914, p. 420.

the management obviously cannot be defended on any ground.

Before we inquire to what extent the losses incurred have been due to the rates made, let us consider whether it can be sound policy for railways to make unremunerative rates at the expense of the taxpayers. Either those who pay non-compensatory rates and those who pay the taxes levied to meet the deficits they cause are the same people, or they are different people. If they are the same people, what they gain by the rates is taken from them in increased taxes. If they are different people, those who pay the rates get their transportation for less than cost and those who pay the taxes pay for something they do not get. It is hard to see how anybody can be benefited by saving money through low rates and having it all taken away in increased taxes. It is also hard to find justice in giving some people low rates at the cost to others of higher taxes.

Both common-sense and equity require rates to be so fixed that those who receive transportation service shall pay for it in full. The application of this principle to the situation in Canada makes it easy to decide in regard to the soundness of the rate-making policy followed on the government railways, if to it are due their losses. These railways serve only the people of the eastern provinces, and but part of them. The people of the entire Dominion must pay the taxes levied by the government. Therefore, if the trouble with the government railways is that their rates are too low, the few who use their service are unfairly benefiting at the expense of all the people of the country.

In spite of its chronic deficits, the freight rates of the Prince Edward Island Railway are very high, averaging over 4 cents per ton per mile. Its passenger rates are relatively low, averaging about 1.75 cents. But the Prince Edward Island is small and serves a restricted territory. The rates of the Intercolonial are more instructive. The average rate per passenger per mile on the railways of the United States in 1914 was 1.98 cents, and on all the railways of Canada, 2 cents.<sup>1</sup> On the Intercolonial it was 1.67 cents.<sup>2</sup> The average rate per ton per mile in the United States was 7.33 mills, and in Canada, 7.42 mills.<sup>3</sup> On the Intercolonial it was only 6 mills.<sup>4</sup>

But comparison of the rates of a single railway with those of the railways of a whole country may be misleading. For example, while the average freight rate of the Intercolonial is lower than the average rate of all the railways of the United States, there are many individual lines in this country whose average rates are lower than its average rate. The average in 1914 for the entire eastern district of the United States, in which one-half of all the freight tonnage is moved, was only 6.39 mills.<sup>5</sup>

In the eastern parts of both Canada and the United States the rates generally are lower than in the western parts. This is due to various causes. In the eastern part of this country the freight traffic is dense, and the rates for years were determined by fierce competition, which reduced them to a low basis. The effects were felt in Eastern Canada. There is a great deal of traffic which moves on railways partly in that country and partly in the United States. Among these lines are the Canadian Pacific, the Grand Trunk and the Michigan Central. In fighting for their shares of this competitive business, these roads made their through rates the same as those of rival lines in the United States, and had to put their local rates in Canada on a corresponding basis. The rates of the Intercolonial were affected by this policy.

The territory through which and the conditions under which the International operates are, of course, similar to those of the private railways of Eastern Canada. There-

fore, its rates may most fairly be compared with theirs. The principal privately owned lines serving that section are the Canadian Pacific and the Grand Trunk. Unfortunately, it is not easy to compare their rates with the Intercolonial's. The Intercolonial's lines begin at Montreal and extend to the Atlantic seaboard at St. John, Halifax and Sydney. The Canadian Pacific divides its western and eastern lines at Port Arthur and Fort William, on the western boundary of Lake Superior. Therefore, while its eastern lines extend as far east as the Intercolonial's, they include a mileage extending more than 1,000 miles farther west than the Intercolonial extends. The Grand Trunk has more mileage west of Montreal than east of it. Because of these facts the average rates of the Grand Trunk and the eastern lines of the Canadian Pacific probably would be higher than those of the Intercolonial, even if their absolute rates in the parts of their territory corresponding to its territory were the same.

There is another factor of no small importance to consider. This is the relatively great length of the Intercolonial's lines between its main terminals. The immediate purpose of its original acquisition and development by the Dominion<sup>6</sup> was to bind more firmly together the maritime provinces, whose population was chiefly French, and the rest of the Dominion. To accomplish this it was necessary to build a line to Montreal. There was friction between Canada and the United States. It was feared that if this line was built nearer the border it would, in case of war, fall into the hands of the United States.<sup>7</sup> Therefore, a route was surveyed as far as possible from the border. This extended northward to the wild, inhospitable, and almost unpeopled shores of the Gulf of St. Lawrence and the St. Lawrence River, and thence southward to Quebec and Montreal, making a roundabout and expensive way to handle traffic moving between Sydney, Halifax and St. John, and Quebec and Montreal.

Friction between the United States and Canada long ago ceased. The Canadian Pacific has built a much shorter line, partly in Canada, and partly in the state of Maine, to the Atlantic seaboard, and has almost completed another which runs entirely in Canada and is also shorter than the Intercolonial. An enterprising management would years ago have built a cut-off to shorten the mileage of the Intercolonial between important points, thereby enabling it to compete more successfully for through traffic and to reduce the cost of handling it. Recently the government has built the National Transcontinental, with a shorter line between Moncton and Quebec; but it was intended to lease this to the Grand Trunk Pacific, a private corporation, and the government has assumed its operation only because the Grand Trunk declines to pay a rental of 3 per cent on its excessive cost. Because of the original location of the Intercolonial and the persistent error made in not reducing its length, its mileage between Halifax and Montreal is 837 miles, while that of the Canadian Pacific is only 758 miles. From St. John to Montreal by the Intercolonial is 740 miles; by the Canadian Pacific, only 483 miles.<sup>8</sup> The Intercolonial in moving a ton of freight from Halifax to Montreal carries it 10.4 per cent more miles than the Canadian Pacific, and in moving a ton from St. John to Montreal carries it 53.2 per cent more miles.

The effect produced on the comparative average rates per mile of the Intercolonial and the Canadian Pacific is obvious. The Intercolonial cannot charge a higher absolute rate between any two points than the Canadian Pacific. But when a shipment moves over it, the absolute rate must be divided by a larger mileage to ascertain the average per mile. Therefore, while the actual rates of the two roads between competitive points are the same, the average per mile received by the Intercolonial on through business is smaller than that re-

<sup>1</sup>Railway Statistics, 1914, p. xxiv.

<sup>2</sup>Ibid., p. 46.

<sup>3</sup>Ibid., p. xxvi.

<sup>4</sup>Ibid., p. 48.

<sup>5</sup>Statistics of Railways in the United States, Interstate Com. Commission.

<sup>6</sup>See act of confederation.

<sup>7</sup>Encyclopedia Britannica, 11th ed., article "Canada" (Railways).

<sup>8</sup>Official Railway Guide.



ceived by the Canadian Pacific. This causes the average rates per mile of the Intercolonial to give the impression that its actual rates are lower in comparison with those of the other railways of Eastern Canada than they are.

These considerations show why it is hard to make a fair comparison between the average rates of the Grand Trunk, the eastern lines of the Canadian Pacific, and the Intercolonial. But a detailed comparison of their actual rates would be out of the question; and if the various points mentioned be given due weight, a comparison of their average rates may be instructive. Table II gives their average rates for the two years ending on June 30, 1914, and June 30, 1915.<sup>1</sup>

TABLE II.

	1914			1915		
	Inter-colonial	C.P.R. Eastern Lines	Grand Trunk	Inter-colonial	C.P.R. Eastern Lines	Grand Trunk
Avg. rec'pts. per pas. per mile, cents	1.669	1.808	1.778	1.82	1.894	1.753
Avg. rec'pts. per ton per mile, cents	0.600	0.716	0.687	0.52	0.719	.687

The through rates of the Intercolonial are necessarily the same as those of competing lines. Considering all the conditions, the statistics indicate that its local rates are somewhat lower than those of other lines in corresponding territory; and one of its higher officers expressed to the writer the opinion that they are about 10 per cent lower.

If this is correct, the losses of the Intercolonial are due partly to the lowness of its rates, but more largely to other causes. Its total earnings per mile in 1914 were \$8,625. In order to have paid its operating expenses and 4 per cent on its cost of construction as officially reported, it would have had to earn \$11,541, or 34 per cent more than it did, and its rates would have had to be at least 34 per cent higher. This would have made both its average passenger rate and its average freight rate considerably higher than those of the Canadian Pacific or Grand Trunk.

Not more than one-third of the losses of the Intercolonial can be attributed to its rates. Even this one-third cannot be defended. Like its other losses, this part is defrayed from taxes. The people of the whole country are thus obliged to pay for a large part of the transportation furnished to those who travel and ship over the Intercolonial. If the government charged these travelers and shippers higher rates and voted them an equivalent subsidy, the results to all concerned would be the same, while the public would clearly perceive the true character and significance of the policy followed.

(The concluding part of this article will be published next week.)

## THE FRIENDSHIP CORNERS OF FRENCH RAILWAY STATIONS

By Walter S. Hiatt

Our Special European Correspondent

In war time old things are often done in new and better ways. Before the war there was in each of the larger French railway stations a poste de secours or emergency room for taking care of persons injured or taken ill about the station. After the war began many hundreds of these postes de secours were taken in charge by charitable women's organizations and made over into comfortable resting quarters for the soldiers.

Soldiers, of course, are not always at the front. They must travel as well as fight. Not only are they sometimes sent to the rear when they are wounded or out of condition, but every few months also they are given leave to go home

to visit the family and to rest up. If they have no home or if their families have been scattered, they are given leave just the same; they take it, trusting to Providence to find friends behind the lines.

The establishment of these friendship corners, these station hospitals for both the body and the heart, these restaurants and reading and sleeping rooms, all in one, was not accomplished in a day. First, in the early days of the war the railroads themselves enlarged their postes de secours to provide temporary shelter for homeless French and Belgian refugees in the early days of the war. Gradually they added hospital facilities for the wounded soldiers rolling in from the front, and some of the railways, indeed, turned over whole floors of their larger stations for this purpose, this being done, for example, at the Paris terminal of the Orleans railway and the Paris general offices of the Paris-Lyon-Mediterranee. Gradually the improvement of the hospital train service and the enlargement of the military hospitals made these station hospitals less necessary.

During their brief existence, however, these hospitals had shown the need of caring for the temporary wants of the traveling soldier, often a stranger in his own land, shunted from pillar to post, without money to buy a cup of hot coffee, without the courage to look for the smile or cheering word



Free Restaurant and Hospital for Soldiers in French Railway Stations

that sent him into battle with the feeling that he was truly fighting for dear hearts behind the lines.

It was not long before little bands of women, mothers, wives and sweethearts, had volunteered in each city and town to assist the railroads to care for the traveling soldier, and finally, at the instance of a certain railroad director, all of the French stations were organized for this purpose by different societies, normally formed for other work, such as the Croix Rouge, the Croix Verte, the Union des Femmes de France, the Association des Dames Francaises, the Societe de Secours aux Blesses, the English Women's Emergency Corps Canteen. These good women rapidly enlarged the scope of the work. Instead of being a place where an English, Belgian or French soldier might have his wound rebanded, the poste de secours became a place where meals were served without charge, where a soldier could pass the night in a clean bed, or spend the few hours of waiting for his train. In short, these rooms became living centers of love.

This final and beautiful touch has been given by the presence of the girls and young women who, save for the supervision of the chief nurse and manager, are now practically in charge of all the rooms. The chief nurse is usually an older married woman. At the Gare St. Lazare, in Paris, Madame de Berckem, wife of the general of that name, oversees the operation of the poste de secours. The younger women, too young to leave home entirely or to serve as field or hospital

<sup>1</sup>Railway Statistics of the Dominion of Canada for years named, and official information as to Canadian Pacific eastern lines.

nurses, and for the most part members of exclusive society circles, have found here the most natural means of satisfying their desire to lend a helping hand in the war. There are probably some 5,000 young women now helping in this work.

Of all the places on the earth, railway stations are the centers of the truest, most unsimulated sentiment; and in war times the meetings and partings there intensify the sentimental atmosphere about these buildings, too often so forbidding in aspect.

It may have been for this reason that these young women, in ordinary times not permitted to leave their homes alone, have been attracted to this work of cheering the soldiers that come and go by the hundreds and the thousands day in and day out. At any rate, these young ladies who at home have their maids, are now eager to leave their homes before day-break in the cold of winter and to go to the railway stations to take their turn in the relays that search the trains and platforms for stray soldiers to lead to the canteen, or to wait on them humbly, kindly and smilingly.

This job is practical as well as sentimental. At the Gare de Montparnasse, in Paris, at Bordeaux, at Toulouse in the south, at all the stations, this work goes on as work rather than as a charity function. At the end of each watch the white dresses are soiled, stained and spotted, the feet are weary with tramping, the hands raw and cold. An astonishing amount of work is done each day by these young women, particularly on those days when the hospital trains arrive with their wounded and when these wounded must be helped or carried to waiting ambulances. At the Gare St. Lazare, the vast Paris terminal of the State Railways, there is a reading room, a restaurant, a sleeping room, and a hospital, the entrances of which are but a few dozen feet from the trains that come and go hour in and hour out. Each minute brings a new soldier. No less than 100,000 meals have been served there since February 10, 1915; no less than 6,000 wounds have been dressed and no less than 300,000 soldiers have passed by. In short, enough soldiers to make five army corps have been smiled upon, waited upon, sent on their journeys by the dozen mademoiselles on duty there.

Their task is not an easy one. While the soldiers are always quiet, kind, and on their best good behaviour, they are poor and often literally penniless. Money must be secured to pay the expenses of keeping open the restaurant and hospital, of slipping a few sous unawares into the capacious pockets of the friendless soldier.

Therefore, these young women, assisted by their most pleasing smile, and dressed in their spotless white uniforms, troop through the arriving and departing trains, collection box in hand, begging for the soldiers of France, for their soldiers. Not an easy part of the work, that, for it is easier to give than to ask. Yet the public is as generous as it can well be. The money comes in, by pennies in the third class, by franc pieces in the second and first class compartments, not too quickly, not more than ten dollars a day, yet enough to pay for the food. When private charity fails to respond the railroad companies, who are already running special fast trains to and from the front so soldiers on leave may lose no time, furnishing heat and light in the canteens and rendering many little services necessary to the orderly maintenance of the friendship corners, are visited by the young women, and they do not come away empty-handed.

Just now the most war-like, the most picturesque of the big railway stations of France, other than possibly that at Havre, is that of the Northern Railway at Paris. Here one can see daily thousands of refugees leaving the war zone or trying to get back to their old homes on the border of the invaded districts of the north; here come and go for the most part the soldiers of the great front, arriving on leave, say, with their uniforms soiled by months in the trenches, so soiled that their sky-blue color has become that of clay, the once

white skins of their faces tanned and bronzed, burned and bearded so that they are a fright to all but the little mothers of the canteens. English and Belgian soldiers likewise crowd in at this station from their front to have a peep at Paris.

At this station, therefore, there are two resting places for the soldiers, one established by French women, a second by English women. At the latter the English soldiers get their tea, toast, bread and butter, jam or marmalade, their bacon and eggs, their fish, and such home cooking unknown to the French table. Here, too, are welcomed the English transport workers employed about Paris. On Sunday afternoons, in particular, these and other English soldiers gather here for tea and a smoke and hold little concerts, singing the songs they like best. All is as free as the air; not a penny is charged. When they go on their way, on one of those journeys from which so few hope to return, they are given boxes of food, filled with more bread and marmalade, ham sandwiches, and tobacco for their everlasting pipes. This canteen, such being its formal name, is international in its scope and service. Taking its register for a recent week, I found that meals had been served to 337 British soldiers, 609 Belgians, 17 French, 10 Africans of la legion Etrangere, and 102 Indians.

Just before Christmas a public concert was given in the French canteen, known as the Cantine Militaire et Poste de Secours de la Gare du Nord, to celebrate the 110,000th meal that had been served up to that time in this canteen. "Does this celebration mean that you have had one hundred and ten thousand soldier visitors?" I asked one of the mademoiselles. "My no," she said. "We have had whole armies here for a cup of coffee and a bite of bread. We must have had at one time or another half the soldiers of France."

At the end of the concert one of the young women told some of her experiences with her traveling soldiers. She told how one homeless and penniless holdier on leave for six days in lonely Paris had found lodging in the station, and during all that time insisted on sleeping on the hard floor. "The beds are too clean for me," he had explained. "Keep them for the wounded." She told how another hero of the trenches, duly decorated with the Medaille Militaire, with one of his hands shot to pieces, due to "a hunting accident," so he said, had spent not only his nights, but his days of leave at the canteen. "I'm afraid of Paris," he had told the mademoiselles.

All of the canteens keep registers, for purposes of accounting, and to allow visitors to sign their names. Sometimes the soldiers write out a line of thanks. One poor fellow from the country scrawled: "I was received just as in a hotel where you have to pay to eat." This from a homeless soldier: "May you be blessed by all true soldiers for the way you have reminded us of our absent families."

Thus these kind mademoiselles and their canteens keep on through the long months of the war making friends for themselves, their country, and its railways, and piling up pleasant and enduring memories around the noisy, dingy stations.

One enthusiastic station master said to me: "I wish we could manage to keep them on as steady employees after the war is over!"

THE CESSATION OF INVENTIONS.—Someone poring over the old files in the United States Patent Office at Washington the other day, found a letter written in 1833 that illustrates the limitations of the human imagination. It was from an old employee of the Patent Office, offering his resignation to the head of the department. His reason was that as everything inventable had been invented, the Patent Office would soon be discontinued and there would be no further need of his services or the services of any of his fellow-clerks. He therefore decided to leave before the blow fell.—*From Scientific American.*



# First Steel Coaches for the Boston & Maine

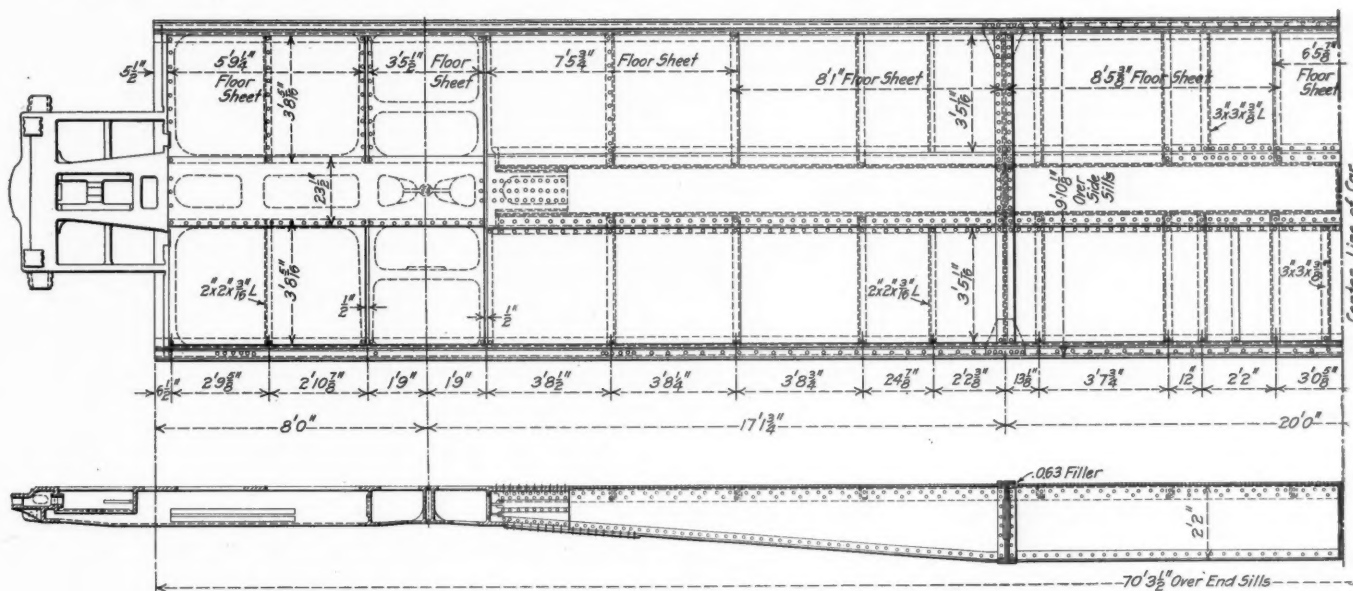
Seating Capacity Is 88 and Weight 118,500 lb., Weight Per Passenger Being 1,346 lb.; 4-Wheel Trucks Used

THE Boston & Maine recently received from the Pullman Company six steel coaches and two steel smoking cars which are the first passenger cars of this type of construction that this railroad has placed in service. The cars will be used in through service between New York and Portland, Maine, and will be followed by six 60-ft. baggage cars and two 70-ft. combination baggage and mail cars.

The new passenger cars are 70 ft. 3½ in. long over end

bearers placed 10 ft. on either side of the center of the car and built up of 5/16-in. pressed diaphragms with 6-in. by ¾-in. top cover plates extending across the car at the top and under the center sills at the bottom.

There is an anti-telescoping device which consists of two 6-in. 23.9-lb. I-beams at each end forming a part of the vestibule door post construction. In addition there are used in the body and construction a 3½-in. by 3-in. by 5/16-in. angle at the corner riveted to a 4-in., 8.25-lb. Z-bar, while

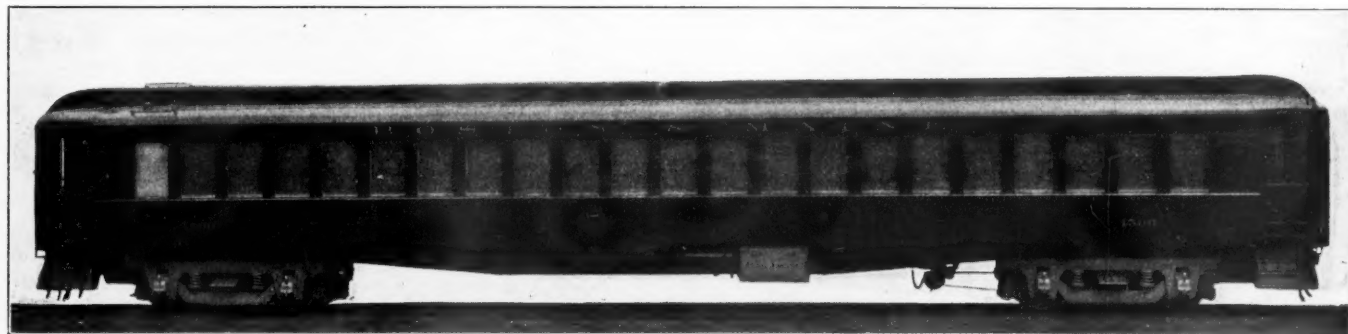


Underframe of the Boston & Maine Coach

sills, 80 ft. 3¾ in. long over buffer face plates and are mounted on four-wheel trucks with 8-ft. wheelbase and spaced 54 ft. 3½ in. between center plates. Commonwealth cast steel platforms and double body bolsters are used with center sills of the fishbelly type. The center sills are built up of 5/16-in. web plates with 5-in. by 3½-in. by ¾-in. angles outside at the top and 3-in. by 3-in. by ¾-in. angles inside

there are two Z-bars of the same weight forming end posts between the door and corner posts. The door posts are 6-in., 23.9-lb. I-beams and the end plate is a 7-in., 12.25-lb. channel. The side frame construction includes a dropper-bar belt rail, with 4-in. by 1/8-in. pressed channel side posts, two per pier.

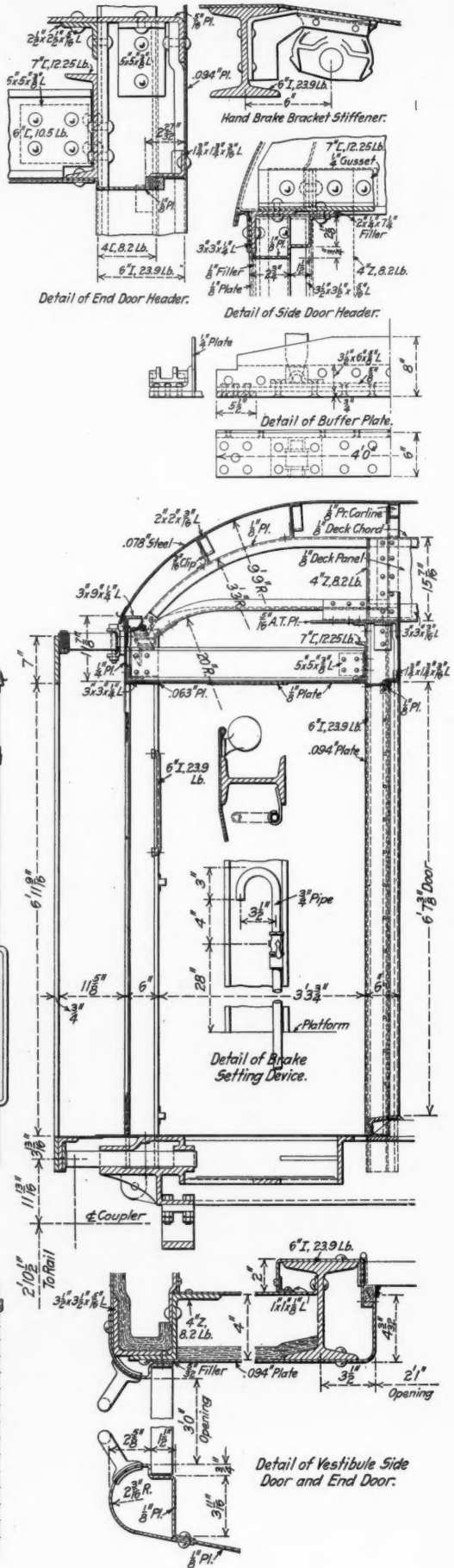
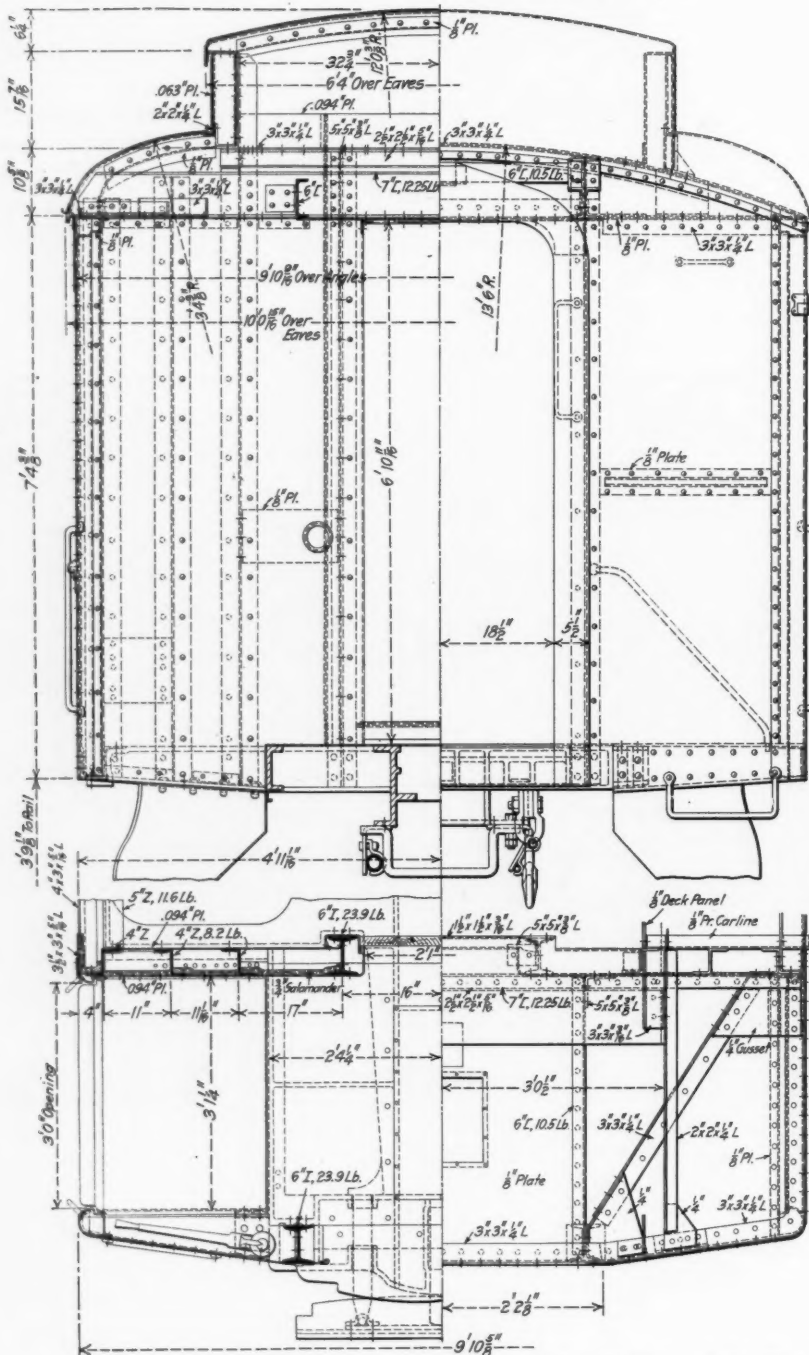
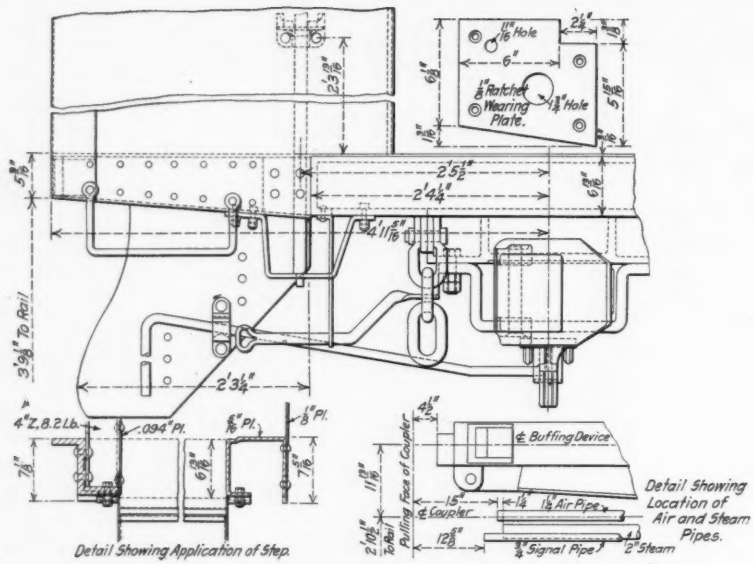
The coaches weigh complete 118,500 lb., which gives a



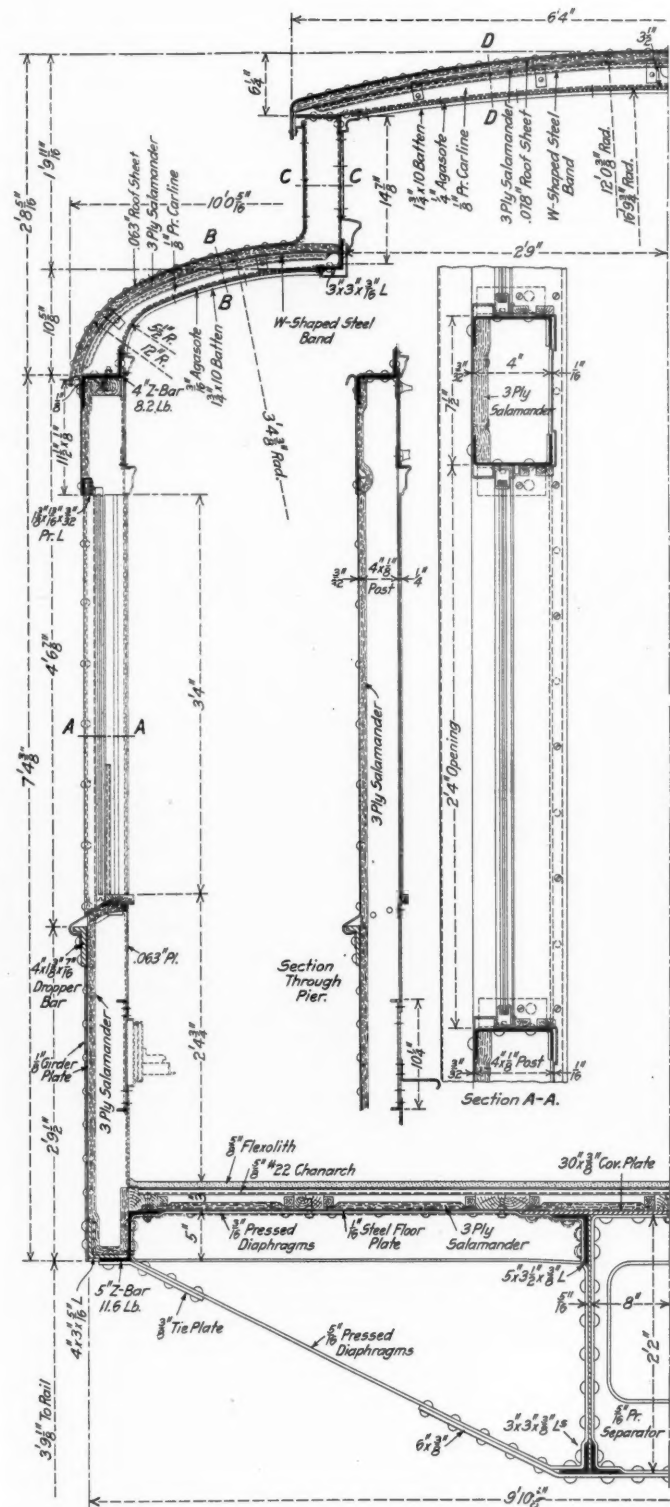
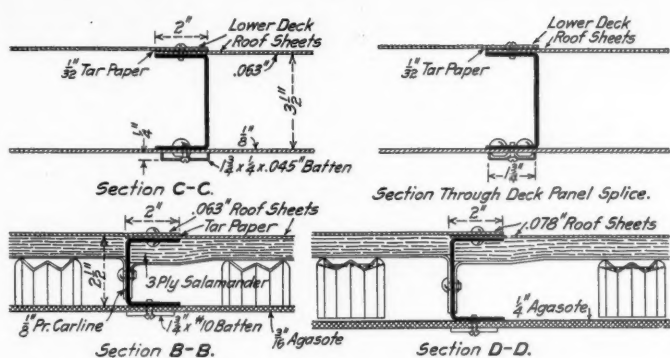
Boston & Maine Steel Day Coach

and outside at the bottom. The sills are 26 in. deep at the deepest part and are spaced 16 in. apart and there is a 30-in. by ¾-in. top cover plate extending between the bolsters. The side sills are made up of 5-in., 11.6-lb. Z-bars riveted to 4-in. by 3-in. by 5/16-in. angles and extending the full distance between the bolsters. The floor beams are 3/16-in. pressed diaphragms, 5 in. deep, and there are two cross-

dead weight per passenger of 1,346 lb. The smoking cars weigh 118,000 lb., the dead weight per passenger being 1,282 lb. The seating capacity of the coaches is 88 and that of the smoking car is 92; the latter has one saloon. The dead weight per passenger compares favorably with that of the composite underframe cars now in service on the Boston & Maine, this weight in the latter cars being 1,262 lb. The





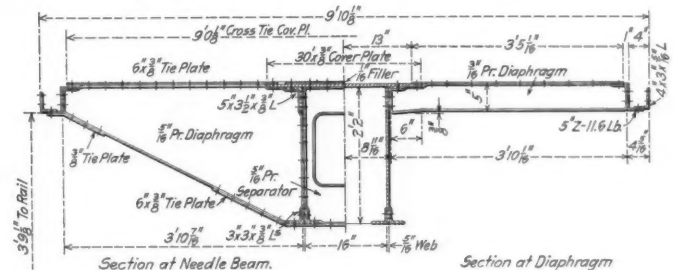


Cross Sections of the Boston & Maine Coach

table shows a comparison between these cars and a number of other steel coaches:

	Total weight, lb.	Seating capacity	Weight per passenger, lb.	Length over end sills	Type of truck
Boston & Maine.....	120,000	88	1,346	70 ft. 3 1/2 in.	4-wheel
Pennsylvania.....	120,000	88	1,364	70 ft.	4-wheel
New Jersey Central..	115,800	78	1,480	63 ft.	4-wheel
New Haven.....	131,000	88	1,488	70 ft. 6 in.	6-wheel
New York Central..	142,000	84	1,690	70 ft.	6-wheel

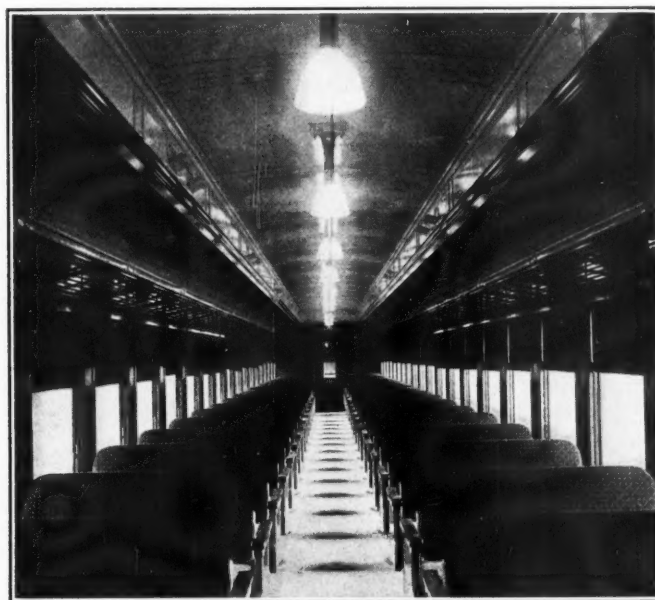
The trucks under the Boston & Maine cars are of the four-wheel Commonwealth cast steel type, equipped with 5 1/2-in.



Cross Sections of the Underframe

by 10-in. journals and solid steel wheels. They are fitted with clasp brakes.

The electric lighting is of the axle generator body suspension type, one-half of the new equipment having the Safety Car Heating & Lighting Company's "Underframe" system and the other half the Gould system. The lighting equipment includes 16-cell, 300-ampere-hour batteries. The lighting distribution to passengers is effected by drop lamps, all located on the center line of the car. The customary upper deck sash is omitted, the only openings being those required for the automatic ventilators. To insure more than the usual



Interior of the Boston & Maine Coach

natural light, the window sash is brass, of the narrow Forsyth type, giving a larger glass area than is possible with the wider style of wood sash. The seats are of the reversible type made to insure the greatest comfort to passengers together with simplicity of design. They were manufactured by Heywood Brothers & Wakefield Company, Wakefield, Mass. The seat covering consists of Chase's figured green frieze in the coaches, and in the smoking cars Chase's Gibraltar leather is used. All other construction details are the same for both coaches and smoking cars. The interior color scheme is cream white for the headlining and lower deck, dull cherry for the walls above the belt rail and dirt gray below. The floor-

ing is of Flexolith cement, with color to match the lower side walls. Three-ply Salamander insulation is used in the walls and roof, with Agasote headlining.

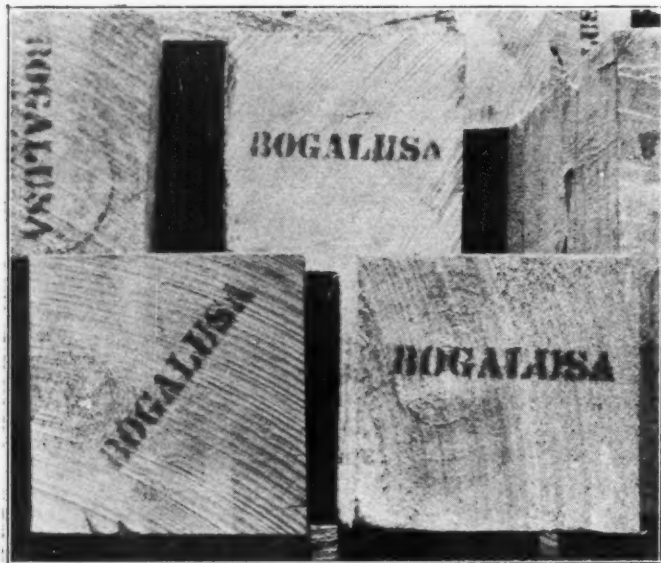
Westinghouse PC brake equipment is used with 16-in. service cylinders and 14-in. emergency cylinders. The draft gear is Miner friction type A-3-P with Pitt couplers, and the buffers are Miner friction type B-10.

### BRANDING LUMBER AT THE MILL

After a number of years, a growing sentiment on the part of the lumber manufacturers in favor of the trade-marking of lumber has crystallized into definite action. The Southern Cypress Manufacturers' Association has adopted this practice and other lumber associations are either formulating plans for carrying it into effect or have the matter under serious consideration. In addition to this a few manufacturers have commenced to mark lumber as individuals and it is expected that others will follow their example.

The trade-marking of lumber is one method that will be used by the lumber manufacturers in their campaign to secure the proper recognition of their product for those purposes for which it is best suited and to establish a reputation for fair dealing and standardized products. As carried out by the Cypress Manufacturers' Association each piece will bear the name of the association and a number designating the mill where the stick originated. By bringing the name of the association or individual manufacturer to the notice of the user a closer relation between them is brought about which will encourage the user to bring to the manufacturer's notice any irregularities from which he has suffered.

In the case of the association mark, each mill is identi-



The Bogalusa Brand of the Great Southern Lumber Co.

fied and any objectionable practice by the mill or by the jobber can be quickly run down. A strict compliance with the association regulations will soon create a reputation for the trade-marked lumber which will mean a return to the manufacturers far in excess of the expense entailed in marking.

One advantage of this system lies in the fact that it will mean as much to the small producer as to the largest. Any mill which will conform to the regulations of the association can share in the reputation which the marked lumber will enjoy. A few of the larger manufacturers have recently begun the practice of branding their product with individual

trade-marks, thus establishing reputations for the individual manufacturers rather than the associations. Trade-marks of this kind are shown in the photographs.

There have been cases in the past where the producer and user have suffered alike from irregular practices on the part of the middleman, who has sold lumber as belonging to a higher grade than it classified according to the manufacturers' grading rules. It is apparent from this that the marking of the grade of the lumber would be a desirable addition to the brand. It has, however, been found impossible thus far to work out any practicable scheme for doing this. The rules for grading are not uniform in all localities and much lumber is used for purposes requiring special gradings or selections. Another objection arises from the possi-



The "Newman" Brand on the Sides of Sticks

bility of some change in the grading of individual sticks after they have been graded at the mill because of the disappearance of some defects and the appearance of new ones, through changes of temperature, humidity or other causes while the material is en route.

However, with the trade-mark clearly shown on the stick the purchaser can readily trace down any irregularities in the grading. It is also entirely possible that select structural material classed as dense southern yellow pine, according to the recently adopted classification, will be placed on the market branded as to grade.

The accompanying photographs show two schemes for branding the lumber: one on the side and the other on the end. The latter is the favored practice and is executed automatically by a machine as the lumber leaves the trimmer table, the marks being a combination of an impression in the fibres and an ink mark. When the prices are branded on both ends the ink is commonly used on one end only. Marking the sticks on both ends simplifies the process and has the advantages that when the lumber is piled the marks will always be visible on the ends of all the sticks exposed on any side, and the piece is still identified after one end has been cut off. The minimum size which it has been found practicable to mark is 1 in. by 3 in.

The trade-marking of lumber will work to the advantage of the reputable dealers and to the disadvantage of the unscrupulous. With this impetus to fair dealing the gain to the purchaser should be great, particularly to a large purchaser such as a railroad.



### JOSEPH RAMSEY, JR.

Joseph Ramsey, Jr., president of the Wabash during the exciting period when the Wabash gained an entrance into Pittsburgh, died suddenly of apoplexy on July 7 at his home in East Orange, N. J. Although the scheme of using the Wheeling & Lake Erie and building the Wabash-Pittsburgh Terminal to give the Wabash and thus the Gould system an entrance to Pittsburgh and to connect the Wheeling & Lake Erie and the Western Maryland to give the system an Atlantic coast port is usually credited to George Gould, the Wabash-Pittsburgh Terminal, part of the scheme at least, originated with Joseph Ramsey, Jr. The plans had to be carried out against the bitter opposition of both the Pennsylvania and New York Central lines and were bold in the extreme. It was Mr. Ramsey who secured the contract with the Carnegie Steel Company for a volume of traffic, which if the Wabash-Pittsburgh Terminal had ever been able to handle it, might conceivably have made it a fairly successful road instead of the monumental failure which it proved to be.

In September, 1905, after the stock transfer books of the Wabash had been closed, Mr. Ramsey who had been president since 1901, advertised over his own signature as president, an appeal to the debenture and stock holders asking for proxies for use at the annual meeting on October 10. He said that he represented no financial interests but that this action was taken solely by the desire to save the company which he had been president of from the results which he thought would follow from further control by the Goulds. The Wabash had long been a Gould road and it was thought that George Gould and the Gould estate could control at least 40 per cent of the proxies. When the annual meeting took place, Mr. Ramsey was not able to elect even one director. The failure of his attempt to wrest control from George Gould appeared absurdly flat. The fact is not generally known and has probably never been published before that the late Russell Sage, who held large blocks of the Wabash debentures as well as considerable amounts of stock, had told Mr. Ramsey that he could count on him for his proxies—the debentures had voting rights as well as the stock. At the last minute Russell Sage changed his mind and decided to give his proxies to the Gould estate. Mr. Ramsey, embittered, turned his fight for proxies into a bitter attack on the treatment which he had received from the Goulds.

While the Gould-Ramsey attempts to get into Pittsburgh and get an Atlantic coast outlet for the Gould system proved to be a disastrous failure, it is not entirely fair to judge the conception of Mr. Ramsey by the results. George Gould at that time was even less inclined to give others authority than he has been in more recent years, nor would he, it is generally believed, take time himself to study and properly conduct the affairs of his companies. It may be that Ram-

sey's Wabash-Pittsburgh Terminal plans were inherently impossible of successful fruition, but whether or not this is so, their failure was assured by the clash of Ramsey and Gould in the carrying out of these plans.

Joseph Ramsey, Jr., was born on April 17, 1850, at Pittsburgh, Pa., and was educated at Western University and began railway work in 1869, in an engineering corps of the Pittsburgh, Cincinnati, Chicago & St. Louis. He later served as engineer on construction and then as assistant engineer of the Cincinnati & Muskingum Valley. From May to October, 1871, he was chief engineer on location of the Bell's Gap Railroad, then assistant engineer on the Pennsylvania Railroad; from April, 1872, to 1873 he was engineer and then to 1879 chief engineer and superintendent of the Bell's Gap Railroad. He was then chief engineer and superintendent of the New Castle & Lake Erie. From November, 1879, to April, 1882, he was chief engineer and superintendent of the Pittsburgh Southern, after which he served as chief engineer and general manager on various roads until August, 1883, when he became engineer on the Cincinnati, Hamilton & Dayton; and from 1886 to 1890 he was chief engineer of that road. He was then assistant to president of the Cleveland, Cincinnati, Chicago & St. Louis until June, 1891. Mr. Ramsey also served on different roads including the following: March, 1890, to March, 1895, president of the Peoria & Pekin Union; June, 1891, to April, 1893, general manager of the Cleveland, Cincinnati, Chicago & St. Louis; and from April, 1893, to December, 1895, general manager of the Terminal Railroad Association of St. Louis. From December, 1895, to June, 1901, he was vice-president and general manager of the Wabash, then to October, 1905, was president. While at the head of the Wabash, he also served as president of the Wabash-Pittsburgh Terminal, the Wheeling & Lake Erie, the Western



Joseph Ramsey, Jr.

Maryland and the Ann Arbor. His service with the Wabash terminated in 1905, and in 1906 he was chosen president of the New York, Pittsburgh & Chicago, a projected line designed to compete with the Pennsylvania. In 1910 he became also president of the Ashland & Western and the Lorain, Ashland & Southern. From 1910 to 1912 he again served on the Ann Arbor, and in 1912 also was president of the Wheeling & Lake Erie. At the time of his death he was president of the Lorain, Ashland & Southern.

**WOMEN RAILWAY WORKERS IN RUSSIA.**—Following the satisfactory results of the employment of female labor during the war on the railways, and having in view the shortage of men, the Minister of Ways of Communication has proposed to the southwestern railways to put women in place of the assistant station masters in fourth class stations and sidings. The necessary conditions of such employment are that the women should be properly trained in a railway traffic school and be not under 25 years of age.

## THE AUTOMATIC MEASUREMENT OF STRESSES

By Rudolph Welcker

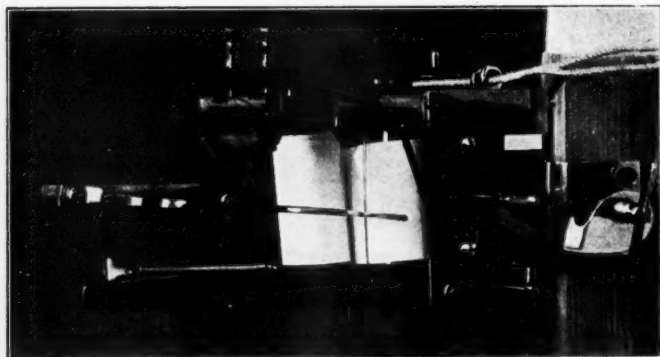
The attention of the writer was called two years ago to the methods pursued by the railroad inspection service of Holland to determine the effect of increased loading or speeds on structures and track. All structures, if exposed to new conditions of loading, are subjected to field tests which are made by a party especially trained for this purpose. The instrument used is shown in the photograph and has passed through a regular stage of development. The results have been so important from an economic point of view that some of the railroads have followed suit and make their own tests to extend the knowledge of their structures. The material collected at that time seemed so valuable and the matter itself so susceptible of future development that the writer decided to investigate the applicability of these methods for the requirements in the United States.

In the course of these experiments it became obvious that the taking of these stresses should be made automatic. The instruments as used in Holland are operated by hand and require an operator for every four units on track work and one for each instrument in bridge work. By improving the mechanical means of moving the paper tape on which the records are made and by resorting to a winder with a special electrical escapement, it became possible to control an unlimited number of extensographs from one central point. This contrivance makes the instruments self-recording and automatic. The method is also to be preferred from the standpoint of safety and simplicity.

It would be impossible to describe in detail in this space the principles and construction of the instruments involved and all the results obtained thereby. As an example of the results some diagrams are shown in the accompanying drawing. Series A was taken in Holland in 1914 and series B in the United States in the following year. Both diagrams

has become evident in so far as the examination of American rails is concerned that the stresses do not prove to be greater than those which are caused by European train loads under the same conditions. This is contrary to the general impression and deserves further investigation. The experiments have been made in both cases with the same set of instruments.

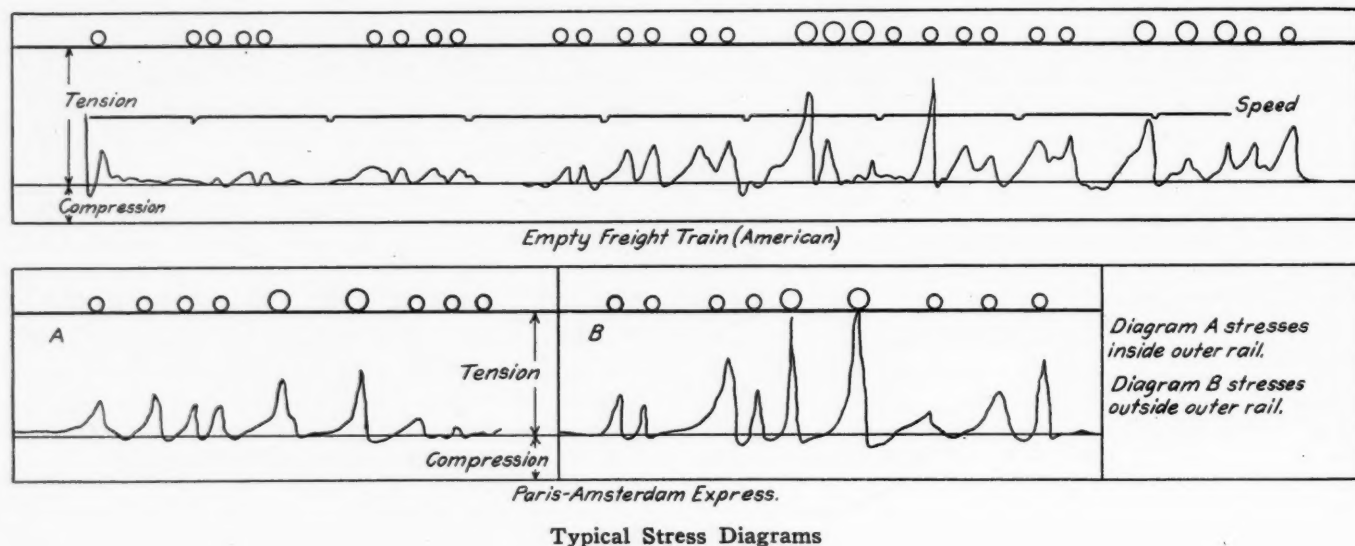
In the case of freight trains hauled by two engines greater stresses were observed under the driving wheels of the second engine. The high speed of the trains is more conducive to high stresses than an increase in axle load, especially on curves which are not properly lined.



The Recording Instrument

The examinations of bridges also have been most interesting. The instruments, for instance, indicate plainly whether cracks in the material of a beam or girder are of importance from the standpoint of safety. It does not need explanation that in such experiments it is absolutely essential to have the instruments under central control.

They have also been used to examine stone and concrete



show stresses in rails during the actual operation of fast trains. As an additional improvement the American diagram shows a number of tally points which represent time marks spaced 0.6 sec. apart. By means of these points it is possible to compute the speed of the train accurately. This complete diagram therefore shows the load, the speed of the load and the stress caused by their combined influence.

Since the record can be controlled from any place and distance from the track it is possible to get a check on the train speed by this means. This factor in itself is of great importance in cases where the train speed is restricted.

By way of results a few general conclusions are given. It

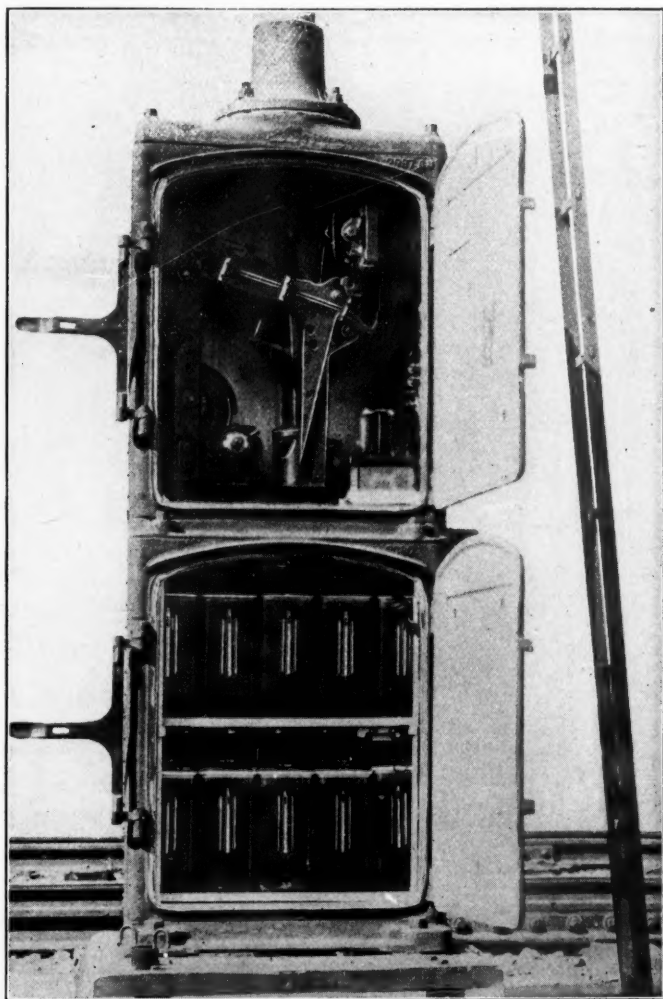
bridges. In such cases, however, it is necessary to increase the gage length of the standard instrument to register the much smaller displacements. These instruments offer an unlimited field of investigation and the time will come when their extended use will result in a more accurate knowledge of engineering structures.

**LARGE BRITISH STEEL OUTPUT IN 1915.**—The British output of steel ingots for 1915, according to statistics just published by the Iron, Steel and Allied Trade Federation, was 8,350,944 gross tons. This is the largest output in the last six years.—*Iron Age*.



## NEW AUTOMATIC BLOCK SIGNALS ON THE ATLANTIC COAST LINE

The Atlantic Coast Line has recently placed in service automatic block signals on its double-track line from Selma, N. C., southward to Parkton, N. C., 62 miles. Selma is 160 miles south of Richmond. Parkton is at the end of double-track and is the junction of the main line and the Bennettsville branch. This installation completes the automatic signal system between Richmond and Parkton, 222 miles. The line was formerly operated by the manual block system and the installation of automatic signals has made it possible to discontinue the service of many operators. On a similar 40-mile section of the road a reduction in payrolls was made at the time automatic signals were put in service which was sufficient to pay for the maintenance and depreciation of the



Double Mechanism Case; Primary Battery in Lower Part

signals and show a clear profit of \$7,000 a year; and beyond this was the increased capacity of the road by reason of the shorter block sections and the increased safety and efficiency of operation. The saving in train detention in one month as compared with the same month the year previous amounted to approximately 21 hours.

The signal system adopted for this section is the Union Switch & Signal Company's standard "wireless" control, the blocks averaging about 5,400 ft. in length, without cut sections. The signals are of the U. S. & S. style S, operating in three positions in the upper right-hand quadrant. Night indications are red for stop, green for caution, and white for clear.

There are two features of this installation of particular in-

terest—the method developed for housing the signal and track circuit battery in a lower mechanism case, and the exclusive use of duplex channel pins for bonding. Primary battery of the "BSCO" caustic soda type is used to operate both the signals and the track circuits, fifteen 500-a. h. cells being used on the signal circuits and five on the track circuits. Rectangular jars were used to economize space, the arrangement of cells being shown in the accompanying illustration. It would also be possible to arrange these cells lengthwise in three rows of 4 cells each on both shelves, making the total capacity of a case 24 cells. This arrangement would expose to view the flat surface of the plates, insuring the best opportunity to see the indications of approaching exhaustion.

The housing of battery in the mechanism case has a number of advantages. In the first place, it is an inexpensive installation, as it eliminates the cost of concrete wells or other underground housing, reduces the amount of wire required for the installation and eliminates all trunking and other conduit. There is also a saving in the length of signal posts and connecting rods. Trouble from broken wires through accident or corrosion because of exposure in trunking is eliminated and the shortening of the wire between the battery and the motor eliminates most of the drop in potential at this point. The possibility of a battery being flooded is practically eliminated and with the battery so conveniently located there is less excuse for inattention on the part of inspectors and maintainers. Since the signal cases afford little protection from the cold, it is necessary in latitudes subject to



Standard Bond Wires with Duplex Channel Pins

low temperatures to compensate for the increased internal resistance and consequent loss of voltage to which the batteries are subject during cold weather by providing additional cells. The number required on this account depends of course upon the degree of cold to be provided for, but the manufacturer's tests indicate that it is not likely in any case that more than 20 cells per signal would be required to replace 16 cells located in a well.

In the track bonding on this installation  $\frac{3}{8}$ -in. duplex channel pins were used. These have been found to be most economical and advantageous. On previous work, soft-drawn E. B. B. galvanized bond wires 46 in. long had been used, but in this case 44-in. No. 6 B. & S. gage copper-clad bond wires were used, the adoption of the shorter length being made possible by the ability to bend the copper-clad wires to a smaller radius than iron. With the use of the duplex pins, only two are required for each joint, instead of four as in single bonding. The breakage of the  $\frac{3}{8}$ -in. drills is much less than the  $\frac{9}{32}$ -in. used with single pins, and the cost of drilling and bonding is less. All bond wires were bent to a template and the holes were drilled at the joints exactly the same distance from the ends, thus making all the bonding uniform.

In order to determine exactly how good a connection resulted from the use of duplex pins several were driven through with a punch, and in each case it was found that the wires had been somewhat flattened where they came in contact with the rail web and the pins had gripped so tightly as to give them the appearance of having been welded or brazed. It is the standard practice on this road, within track circuit limits, to turn the lip of the joint spike toward the

center of the track, the object being to save wires from being worn off, cut in two, or interfered with by the section forces.

This work was installed under the direction of C. J. Kel-loway, signal engineer, to whom we are indebted for the above information.

### STEEL ORE CAR FOR THE DULUTH, MISSABE & NORTHERN

The illustration shows one of a number of steel ore cars recently built by the Ralston Steel Car Company, Columbus, Ohio, under its own patents, for the Duluth, Missabe & Northern.

The features of special interest in the design are the door operating mechanism and the ability to quickly dump the load. A test was made recently with one of these cars loaded with 52 tons of ore, to ascertain the length of time required to dump the load, one man doing the work. From the time the operator applied the wrench to the operating shaft, in-

mesh with worm segments. A transverse shaft passes through the worms for rotating them, and this shaft is mounted near its ends in bearings secured to the side sills. The ends of the shaft project beyond the side sills for the application of a device for manually operating it.

Sprocket wheels are secured to the cross shafts and these sprockets are connected by a chain so that when one or the other of the shafts is rotated, motion will be imparted to both worms for turning the worm gears. When the doors are closed they are kept so by the worm gearing, without the necessity for the use of pawl or ratchet devices. When the sub-shaft has been rotated sufficiently to overcome the dead centers of the link mechanism, the weight of the load in the hopper body forces the doors fully open.

The side sills of the car are composed of channels having their flanges turned inwardly to provide a flush surface for the application of channel side stakes. The end sills are connected to end sill side sills, to which the corner posts are attached. The upper ends of the corner posts are connected



Steel Ore Car with Quick Operating Doors

cluding dumping the load and closing the doors, the car was made ready for the return trip to the mines in 35 seconds.

The door operating mechanism consists of links suspended from brackets secured to the draft sills at the ends of the lower portion of the hopper. The links at the two ends of the hopper bottom are connected by shafts disposed under the doors, and on these shafts rollers are mounted running in a trackway on the doors. Near the end of the hopper body, short shafts are mounted in bearings, having applied thereto armed crossheads with curved links attached to the arms and the door shafts.

A worm segment is mounted on each short shaft and the hub of the segment is made with a clutch member having a lug on it. Another clutch member is secured to each shaft and made to co-operate with the lugs on the other clutch members. The lugs in the two clutch members are so proportioned as to permit of relative movements of the segment and shaft. Worms are mounted between the draft sills near the ends of the hopper body and are disposed over and en-

to top end angles, to which the upper ends of the front and rear inclined hopper sheets are secured. The draft sills extend forward beyond the end sills and back to the inclined sheets, to which they are secured.

The bolsters are composed of diaphragms connected to the side and center sills and bottom cover plate. The upper edges of the diaphragms are riveted to a floor plate which covers the entire portion of the frame from the hopper sheet to striking plate. This floor cover plate is riveted to the end sill angles, draft sills, and side sills, and has a flange at its rear end which is connected to the hopper slope sheet, forming a girder which permits of the buffing stresses being equally distributed over all parts of the underframe.

Secured to and extending from one bolster to the other are longitudinal or sub-sills spaced a short distance from the side sills. These serve to increase the strength and rigidity of the underframe, and also provide a connection for the door bracket hinges and sloping side floor sheets. This sub-sill is connected to the side sill proper.



# Grade Crossing Elimination in Camden, N. J.

The Pennsylvania Railroad Is Elevating the Atlantic City Line Tracks, Using Several Types of Street Subways

THE Pennsylvania Railroad is completing the elevation of tracks on the Atlantic City line of the West Jersey & Seashore in Camden, N. J., involving the construction of 12 under-crossings for city streets. The project forms one step of a plan for a somewhat complete elimination of grade crossings in that city, and is unique in several ways. No two subways are exactly alike. Four different varieties of steel bridge floors have been used, and, unlike most other

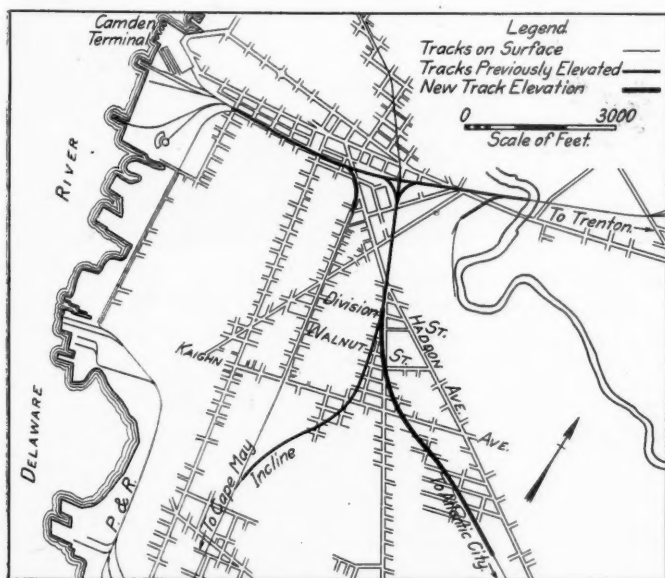
present work involves the elevation of the Atlantic City line south from this junction for a distance of  $1\frac{1}{4}$  miles. This portion of the line crosses all the streets on a skew with the result that there is only one square subway, that at Whitman street, where the street was relocated to obtain a right-angle crossing. At the north end of the work, where the line crosses Mt. Ephraim avenue on a very flat skew, it was found desirable to provide a steel viaduct about 500 ft. long crossing also Mt. Vernon and Walnut streets, which intersect Mt. Ephraim avenue under or near the structure.

As seen on the accompanying profile, the original grade line had an ascending grade of 0.5 per cent southward, beginning at Sycamore street. This made it possible to make the descent from the south end of the track elevation with a 0.25 per cent grade, commencing at Atlantic street. This is the critical point in the new grade line, as governed by the head-room requirements for the subway at this street. The material depression in the natural ground surface and the old grade line, north from this point as far as the Mt. Ephraim avenue viaduct, resulted in a large variation in the severity of the head-room conditions at the various subways within those limits and advantage was taken, in the more favorable cases, to use more economical designs of subway floors than were permissible where the head-room requirements were more difficult to fulfill.

## THE SUBWAYS

The subways are all steel girder bridges with the exception of the one at Sycamore street, which is a 20 ft. skew arch, and with this exception all of them embrace the full width of the streets. At Whitman street the superstructure makes a clear span from abutment to abutment. At all of the other steel subways, intermediate supports are provided at the curb lines and in the Mt. Ephraim avenue viaduct, a third row of columns is placed in the center of the roadway. The vertical head-room was made 14 ft. at Kaighn avenue and Mt. Ephraim avenue to provide for the existing car line on the former and afford provision for a future line on the latter. On all of the other streets, except Lemon and Whitman streets, it is 13 ft. At these two, which are located in the run-off on the south end, a vertical clearance of 12 ft. was established.

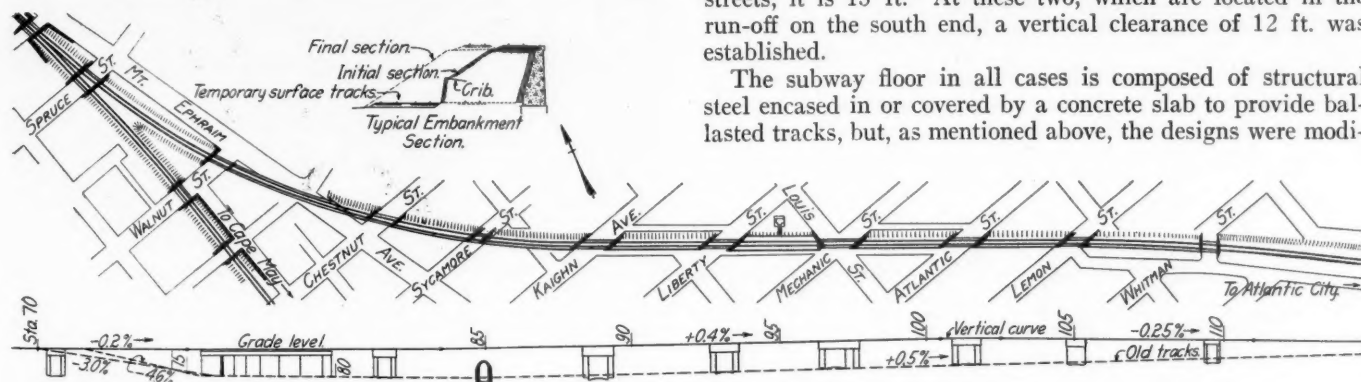
The subway floor in all cases is composed of structural steel encased in or covered by a concrete slab to provide ballasted tracks, but, as mentioned above, the designs were modi-



Map Showing Progress of Track Elevation

track elevation projects, the filling material has been obtained within one-quarter mile of one end of the track elevation limits, and was handled with narrow gage equipment.

In 1905 the Pennsylvania Railroad entered into a contract with the city of Camden for the elimination of grade crossings in that city, and by the end of 1913, the progress on this

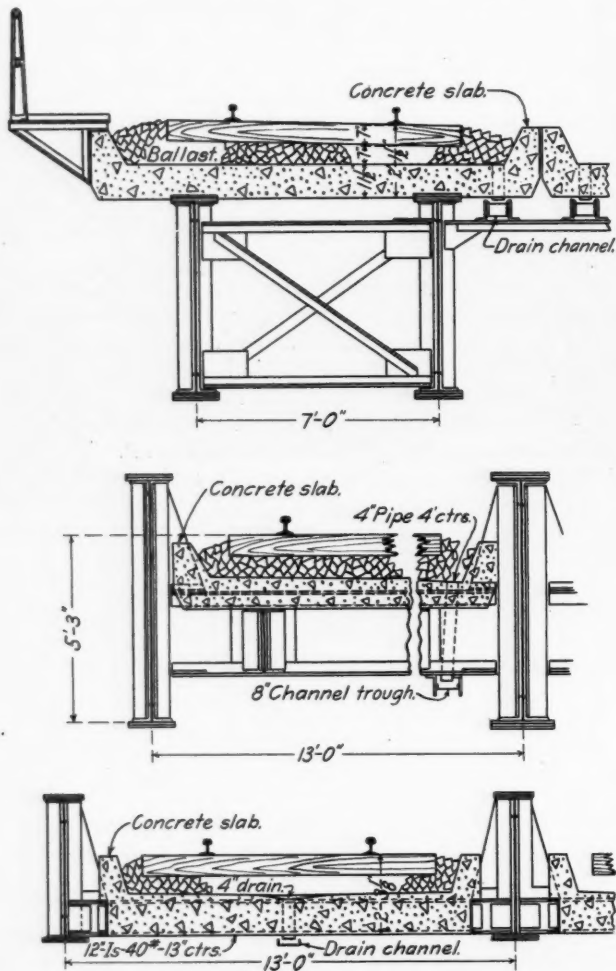


Map and Profile of the Work

work was marked by the elevation of the Trenton division tracks from the Camden terminal to the Cooper river, and on the Cape May line of the West Jersey & Seashore as far as Van Hook street. The Atlantic City line, which connects with the Cape May line at Division street, reached the elevation by an incline commencing at Walnut street. This required a grade of 3 per cent for northbound trains and one of 4.6 per cent for southbound (down grade) trains. The

fied as the clearance conditions permitted. At Whitman street the floor consists of steel troughs, spanning transversely between the girders with a floor thickness of 3 ft. from base of rail to under clearance. At Lemon and Atlantic streets 12-in., 40-lb. I-beams encased in concrete were used with a floor thickness of 2 ft. 10½ in. At the subway for the intersection of Louis street and Mechanic street and the one at Liberty street, sufficient head-room was available to permit

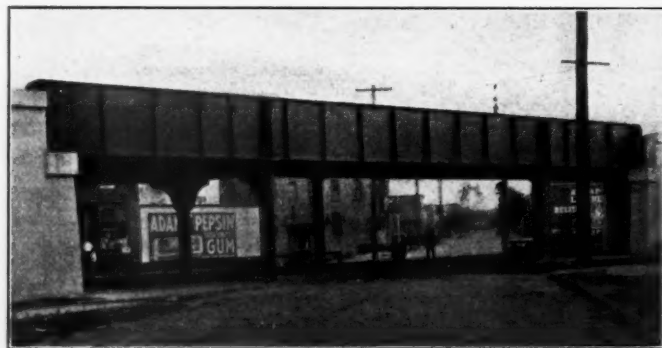
the use of through girders with a floor beam and stringer type of floor, the concrete slab resting on the top flanges of the stringers, and giving floor depths of 5 ft. 3 in. and 4 ft. 2½ in., respectively. At Kaighn avenue and Chestnut street, deck girders with concrete deck slabs were used, with a total depth from base of rail to clear of 7 ft. 10½ in. and 6 ft.



Types of Floors Used for the Subways

5¾ in., respectively. In the Mt. Ephraim avenue viaduct, the same type of floor was used as at Lemon and Atlantic streets, except that 15-in. I-beams were used which were raised materially above the lowest possible position, thereby giving a total floor depth of 4 ft. 5½ in.

These structures embody a number of interesting details.



Subway at Intersection of Lewis and Mechanic Streets

All floors were waterproofed with pitch and five-ply felt paper protected by a course of brick, laid on a sand cushion, except at Lemon street, where tile one inch thick were used to give a smaller floor thickness. In all cases where the floor

consisted of slabs supported on top of the steel work, drainage was afforded by pipes passing through the slabs to steel troughs underneath and draining to down spouts at the columns. Where these slabs rest on the back walls of the abutments, expansion was provided by a lead bearing plate, which consists of sheets of lead soldered together. Where the floor

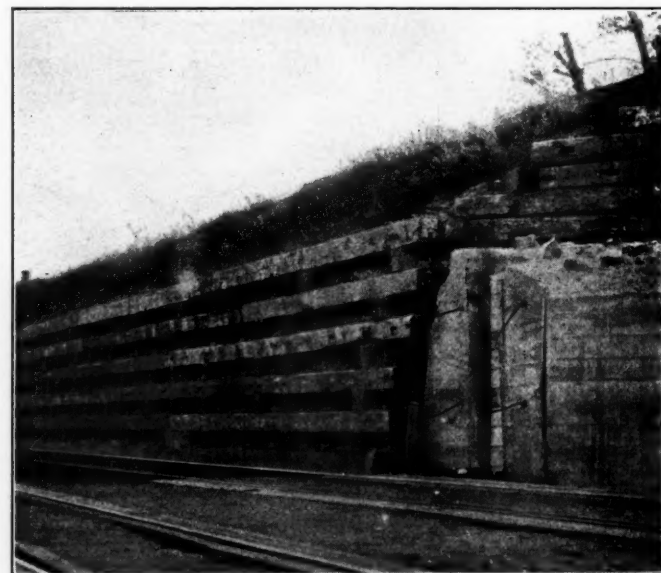


Looking North Toward Spruce Street Junction. Atlantic City Line Incline on the Right, Mt. Ephraim Avenue Viaduct on the Left

consisted of I-beams encased in concrete, steel aprons were provided which curve downward over the back walls.

The Mt. Ephraim avenue viaduct is supported on 2 abutments, 18 columns and 1 concrete pier. The latter is located on the south side of Walnut street and serves as the fixed point, expansion bearings being provided at each abutment with the columns acting as rockers.

In only three cases was any change made in the existing



A Section of the Heavy Timber Crib Retaining Wall

grade of the street. Lemon street and Whitman street were materially depressed to obtain the desired head-room. At Kaighn avenue it was necessary to lower the street grade by the amount which it had been originally elevated to cross the tracks which had been located somewhat above the natural ground surface at that point.

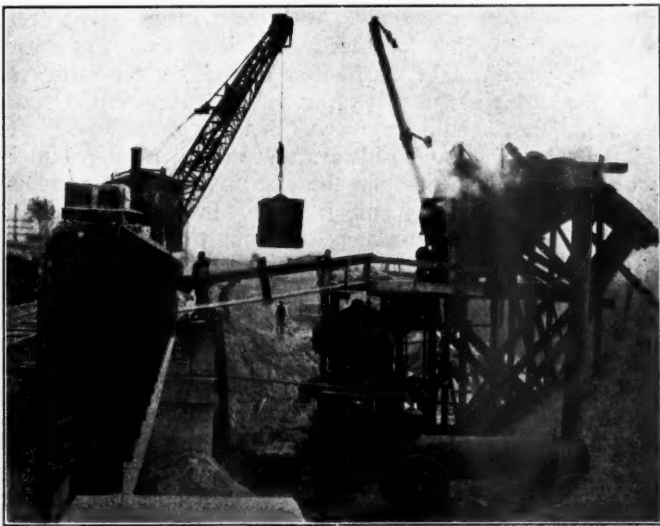
#### CONSTRUCTION PROGRAM

The traffic on the Atlantic City line is largely passenger, and is much heavier in summer time than in winter. The



winter schedule provides for 40 trains daily, while the summer schedule, plus an average of about 16 extra trains daily, amounts to about 76 trains on Monday to Friday, inclusive, and approximately 88 trains on Saturday. The old line on the surface consisted of two main tracks, and the right of way permits of a maximum development of four tracks, although the present authority is for the elevation of only two tracks. The need of avoiding interference with traffic during construction and the anticipated addition of more tracks in the future, resulted in a plan providing for the location of the two elevated tracks adjacent to the west right of way line. Owing to the restricted right of way this required a full height retaining wall along the west property line for practically the entire distance and with the operated tracks on the surface thrown as far toward the east side of the right of way as possible, and a temporary timber crib wall alongside the near track, it was possible to provide a full embankment for only one track on the elevation, until surface operation was discontinued. This crib wall was built of 12 in. by 12 in. and 12 in. by 14 in. second-hand timbers, as shown in one of the photographs.

It was the original plan to transfer the southbound traffic to the upper level as soon as the embankment was completed for one track and then build a second timber crib adjacent to the northbound track on the surface and complete the embankment for the northbound track. It was found that this plan would prove expensive, particularly because of the cost of the second timber crib, which at some points would need to be as much as 10 or 11 ft. high. Consequently, it was decided to transfer both northbound and southbound trains to the upper level as soon as the embankment was completed for one track, by the use of gauntlet tracks, and with operation removed entirely from the surface it would be possible to



**The Concrete Plant. Locomotive Crane Raising the Concrete Bucket**

complete the embankment without the use of a second crib retaining wall.

#### CONSTRUCTION METHODS

This project involves 100,000 cu. yd. of embankment, 25,000 cu. yd. of concrete and 1,830 tons of structural steel. The total cost is about \$700,000, all of which is borne by the Pennsylvania Railroad, except \$13,000, or one-half of the cost of the bridges at Sycamore street and Whitman street, which were required to be built by the city of Camden after the passage of the original ordinance, under the terms of which additional bridges, when required, were to be paid for jointly by the railroad company and the city. The James McGraw Company, Philadelphia, has a contract for all the

work except the steel erection, which is being done by the Pittsburgh Construction Company. The concrete work was started in May, 1914, and all footings were completed by July of that year, and the neatwork of all structures by April, 1915. All concrete was provided from a plant located at Lemon street west of the tracks. As shown in one of the photographs, the mixer was located under an elevated bin which was filled by a stiff-leg derrick and a clam-shell bucket. The concrete was delivered to the work in a hopper bottom box mounted on a narrow gage car handled by a Brown-hoist locomotive crane, which also served to transfer the concrete from the mixer to the hopper car by means of a



**South End of Track Elevation Looking North. Surface Tracks on the Right**

bottom dump bucket. For the concreting of footings, the car was transported on a track laid on the surface. When the neatwork of the walls and abutments was being concreted the car was moved over a light trestle on a level with the tops of the abutments and which was also used for transporting the filling material. The retaining walls and abutments are of mass concrete and are damp-proofed on the back.

Work was commenced on the placing of the embankment in February, 1915, after a sufficient amount of the retaining walls and abutments had been completed so that the work of filling would not interfere. The filling material was all obtained from a borrow pit located west of the tracks at the end of the south runoff. The material was loaded with a 70-ton Marion steam shovel and handled in narrow gage side-dump cars by dinky locomotives operating over the light trestle previously mentioned in connection with the concrete work. The embankment was entirely completed for one track by April, 1915, after less than two months' work.

The erection of the structural steel work was not commenced until the embankment had been finished for the one track. This work was started at the south end and continued progressively northward, using standard gage equipment running on a track, laid on the embankment and the bridges as the work progressed. This track was provided with a third rail to permit the operation of the narrow gage equipment for the transporting of concrete for the deck slabs and for additional filling, etc.

The southbound track was placed in service on the upper level early in January, 1916. The gauntlet track installed extends from the south end of the Mt. Ephraim avenue viaduct to a point half way between the Lemon street and the Whitman street bridges. This gave the minimum length of gauntlet tracks and avoided complications with the junction at Spruce street. Operation of the northbound trains over this gauntlet track was commenced on March 21 and work was then resumed on the embankment to complete a sufficient width for two tracks. This work was practically completed about June 1, when the summer passenger schedule with greatly increased service became effective.

The design and construction of this work were under the general direction of A. C. Shand, chief engineer of the Penn-

sylvania Railroad. The design of the subways was under the immediate direction of H. R. Leonard, engineer of bridges and buildings, and C. W. Thorn, assistant engineer, is in direct charge of construction.

### THE RAILWAY WAGE CONTROVERSY

In addition to those mentioned in previous issues many railroads have issued circulars to their train employees regarding the wage controversy, asking them to consider the situation carefully before voting for a strike.

#### BUFFALO, ROCHESTER & PITTSBURGH

A circular by T. F. Brennan, general manager of the Buffalo, Rochester & Pittsburgh, is addressed especially to the older men in the company's employ. Mr. Brennan says:

"I hope that before casting your vote you will give careful consideration to the position of this company which is striving to justly compensate all of its employees for their service and at the same time fairly compensate investors for the use of their money. Your welfare, as well as that of the company, depends on the company's ability to do this.

"The vote of a stockholder in a corporation counts in proportion to the capital he has invested. The vote of a company in the larger railroad associations, when taken on matters of importance, counts in proportion to its mileage. The matter regarding which you are about to cast your vote is of vital importance to you, especially to those of you who have been many years in the service of this company. Your experience and years of service constitute your capital and you are concerned in the result of this vote in proportion thereto; but as the vote of an older employee will count for no more than that of a younger man, who has comparatively little at stake, I most earnestly urge the older men, who because of their longer experience have a better understanding of conditions, to advise the younger men with a view of bringing about an impartial adjustment of the present controversy."

#### SANTA FE

A. G. Wells, general manager of the Atchison, Topeka & Santa Fe Coast Lines, has issued a circular saying in part:

"Some of you have never been through a strike. Take my word for it; such have much to be thankful for, especially those who have wives, mothers, sisters or children dependent upon them for support.

"Here on the coast lines we have by intelligent effort and hearty co-operation built up a transportation organization that is second to none in the world. Do not let us disrupt it.

"Yours are preferred jobs, and in the event of a strike men will flock in from all parts of the country to take your places, because it is known you have good conditions, good pay and good treatment. This is what happened in 1894, and history always repeats itself.

"There has never yet been a big railway strike that the men won. Furthermore, the Santa Fe has never been forced to engage in a strike it did not win.

"The present demands are unjust and impossible. Your insurance against sacrificing the seniority which by years of toil you have built up is to see that your ballot on the impending issue bears the legend 'No.' I appeal to you in the name of that great Santa Fe family of which we are all members, of which we are all so proud, and which your industry and intelligence have helped to create: in your own self-interest and that of those dear to you, and as a man who has your welfare very much at heart, to vote 'No' on the impending issue."

#### BURLINGTON

In a circular issued to the employees of the Chicago, Burlington & Quincy, Vice-President H. E. Byram says:

"The present road schedules, based entirely on the 10-mile-an-hour basis, are the outgrowth of many years of amicable negotiations and arbitrations between the company and your representatives.

"It is not the desire of this company, as a participant in the movement, to deprive you of any of the privileges either in compensation or working conditions that are accorded to you by the existing agreements, but any attempt to apply all the existing rates and favorable rules that produce additional compensation and which have been based on a 10-mile-an-hour basis, to a 12½-mile-an-hour basis in road service, and 8-hour basis in yard service at the 10-hour rates, would have the result of destroying the very foundation of our present basis of payment and produce a result that would be entirely unfair to the company. It is the desire of this company to continue the agreements that are now in force on the 10-mile-an-hour basis as they are at present.

"In the interest of the harmony and fair dealing that has heretofore prevailed in the handling of such matters between the Burlington company and your representatives, I feel it my duty to call your attention to these facts and to ask you to consider them in making up your minds whether to vote in favor of extreme measures which might disrupt and destroy the harmonious conditions that prevail on the Burlington railroad at this time."

#### GULF, COLORADO & SANTA FE

F. G. Pettibone, vice-president and general manager of the Gulf, Colorado & Santa Fe, has issued a circular to the public, explaining the demands of the brotherhoods and of the railways' proposals for arbitration. The circular is in a series of 14, giving a comparison of the earnings of a train crew on various local runs, under the present basis of wages and the proposed basis. In conclusion the circular says: "We address this communication to you, our patrons who travel and ship over our line, for the reason that it is you who must ultimately pay the bill. Regardless of whether the railways or the men are right in this thing, is it not proper that you, the third party, should have a voice in the proceedings? It is fair to both men and railways that an impartial tribunal should sit in judgment upon the case in its entirety and it is your right that this should be done. Is it not, therefore, your duty to exert your influence to bring this about?"

#### COLORADO & SOUTHERN

E. S. Koller, vice-president and general manager of the Colorado & Southern, has issued the following circular to the employees:

"We note that the statement accompanying the ballots on which the engineers, firemen, conductors and trainmen are voting, contain the following statement:

"It (the answer of the railroads) also abolished the 'first-in, first-out' rule and 'automatic release,' and allowed crews to be run through terminals and around other crews."

"This statement is misleading, and to avoid misunderstanding we submit for your information the following: Conferences with the committee representing the men developed the fact that there are many different rules and practices calling for release of crews, etc. It was not the intention of the National Conference Committee of the Railways to disturb these rules and practices as they now exist on individual roads, except to the extent necessary to conform to the following principles, without interfering with existing seniority rules:

"First: To permit short turn-around runs with definite limitations as to miles and hours.

"Second: To permit at the beginning of the day, the combination of a short trip with a straightaway or long trip.

"This proposed limited operation of crews through terminals or turning at terminals, does not justify the broad assertion that 'first-in, first out' rules and 'automatic release' where they now exist are to be abolished."



## NASHVILLE, CHATTANOOGA &amp; ST. LOUIS

John Howe Peyton, president and general manager of the Nashville, Chattanooga & St. Louis, issued a circular to officers and employees, giving actual amounts of payrolls on that road for the month of May.

Dividing all employees into three classes: (1) train and yard service employees, (2) general officers (president, vice-president, general counsel, treasurer, division superintendents, etc.), and their assistants and clerks, and (3) all other employees not included in the other two classes, and analyzing the payroll, it is found that the actual compensation paid these three classes for the month of May, 1916, was as follows:

	Total compensation	Total hours	Average per hour	Total days of 10 hrs.	Average per day
Class 1—					
Enginemen .....	\$46,839	79,447	59 cts.	7,944	\$5.90
Firemen .....	26,874	76,758	35 cts.	7,676	3.50
Conductors .....	23,138	45,139	51 cts.	4,514	5.10
Other trainmen .....	66,180	190,384	35 cts.	19,038	3.50
Total (Class 1) trainmen..	\$163,032	391,728	42 cts.	39,172	\$4.20
Class 2—					
General officers, assistants and clerks .....	\$94,421	296,245	32 cts.	29,624	\$3.20
Class 3—					
All other employees.....	\$314,039	1,760,880	18 cts.	176,088	\$1.80
Total (Classes 2 and 3)...	\$408,460	2,057,125	20 cts.	205,712	\$2.00

"It will be seen that during the month of May, the equivalent of 39,172 ten-hour days at \$4.20 per day was worked by the train and yard employees. It is evident that if a strike be effected by about 1,600 of these employees because their demands for greatly increased compensation are not granted, trains must cease to run, and about *seven thousand other employees* who, during the same month, worked the equivalent of 176,088 ten-hour days at an average pay of \$1.80 per day, must, sooner or later, be thrown out of work.

"This company confidently expects, if a strike is called by those dissatisfied with their present working conditions and who are now paid more than twice the average wages of all other employees, that its employees from all departments will volunteer to fill vacancies in order to prevent the discontinuance of trains, which would result in inconvenience to the public, privation among employees and their families, and serious loss to the company.

"If the emergency arises, *There will be a call for volunteers. Are you prepared to serve?*"

The Association of Western Railways has compiled for distribution a collection of newspaper editorials commenting on the proposal of the railways that the wage issue be submitted to the Interstate Commerce Commission or to arbitration.

## THE BROTHERHOODS

At the recent convention of the Brotherhood of Locomotive Firemen and Enginemen at Denver, Colo., the general secretary and treasurer was directed to send a communication to Washington protesting against any interference by Congress in the wage controversy. The protective committee also reported a resolution, which was adopted, declaring that the work of the locomotive firemen is "skilled labor." Another resolution was adopted urging the employment of white men exclusively as train service employees.

The brotherhoods are conducting an extensive advertising campaign by the use of large posters, giving their arguments in support of their demands, which are tacked on fences and trees, and displayed in stores, barber shops, etc. One of these posters states that an "eight-hour day" for train employees is favored by the governors of 10 states, as follows: Woodbridge N. Ferris, of Michigan; Frank M. Byrne, of South Dakota; William C. McDonald, of New Mexico; M. Alexander, of Idaho; James E. Ferguson, of Texas; Frank B. Willis, of Ohio; Samuel V. Stewart, of Montana; Locke

Craig, of North Carolina; George W. P. Hunt, of Arizona; G. W. Clarke, of Iowa.

They have also furnished slides containing arguments for an "eight-hour day" to a large number of moving picture houses throughout the country.

## THE REGULATION OF RAILROAD PURCHASES

By W. L. Stoddard

WASHINGTON, July 11.

This week marks the last date for the filing of briefs on the tentative draft of rules prepared by the Interstate Commerce Commission for the enforcement of section 10 of the Clayton Anti-Trust act. This law requires that in specified cases purchases of railroad supplies shall be made and dealings shall be had "with the bidder whose bid is the most favorable to such common carrier, to be ascertained by competitive bidding under regulations to be prescribed by rule or otherwise by the Interstate Commerce Commission." The section under discussion goes into operation October 15, and representatives of railroads and of railroad supply manufacturers appeared before the commission last month to present their views.

The act provides that common carriers shall make or have no contracts for construction or maintenance at any time to the amount of more than \$50,000 a year with any firm when the carrier has upon its board of directors or as an agent any person who is at the same time an officer of the company from which supplies are bought, or who has "any substantial interest" in such a company. Within thirty days after making any purchase every common carrier must file a statement with the Interstate Commerce Commission setting forth fully the transaction, naming the bidders; and must describe the manner of the competitive bidding. The commission is empowered to investigate such transactions, and when it has reason to believe that the law has been violated, it must turn over its papers and findings to the attorney general. Besides providing heavy fines for violations of this law, the statute prescribes that bids shall be advertised in newspapers and trade papers setting forth in detail the conditions of the purchase.

Among those who appeared at the hearings before the Commission were J. Kruttschnitt, Alfred P. Thom, Henry B. Spencer, W. A. Worthington, George A. Post, and other representatives of corporations and railroads involved. Mr. Thom presented an elaborate analysis of the proposed rules.

Mr. Thom urged the commission first to define the field in which the proposed regulations should operate. Dealings between a company and its subsidiaries ought not to be considered as coming within the law. He argued that section 80 of the Clayton law did not prohibit interlocking directorates in common carriers, and therefore section 10, to be consistent with section 80, must have the same purpose. He read a letter from the treasurer of the Pennsylvania Railroad who said, in part, "Under the Clayton act it would appear that we would have to restrict transactions to less than \$50,000 per annum; any amount over \$50,000 must be subject to competitive bidding. This would require us to offer outside bidders opportunity to purchase stock in subsidiaries where we now own entire capital stock, and thereby work a great hardship upon us."

Such corporations, declared Mr. Thom, referring to the supply companies owned by the railroads, are merely, "the alter ego of the same corporation. It seems to me that there is not a purchaser, on the one hand, actuated by an unfair or dishonest interest toward the seller, on the other; because, in effect, the purchaser is buying from itself."

The speaker also asked the Commission to define the phrase, "substantial interest" and to make clear the meaning of the word "the most favorable bid" so that in case a bid not the lowest were accepted, the carrier would not be

prosecuted. The question of advertising specifications was discussed at length; also the question of emergency purchase by permission of the commission, and the delays arising from the necessity of publishing detailed specifications.

Representing the railway business association, George A. Post summed up the situation when he said, after endorsing the principle of the bill, that "All that I would ask of the commission is that it shall carefully abstain from any interference with the orderly course of business or put unnecessary burdens upon those who are called upon to bid under the circumstances of the interlocking status. . . . All that the rules should require would be that after the bids are in, the railroad officer whose function it is, upon a review of the case, to decide which is the most favorable bid, all things considered, should award the contract." Some such procedure, Mr. Post declared, would assure the integrity of the buyer and would do away with the "shoestring buyer," a class denounced by Mr. Thom as "the harpies which will seek to fasten their fangs upon the railroads," so that "honest roads and honest business men will hereafter be confronted, by virtue of this system," with a horde of competitors whose activity would force up the price of railroad supplies.

### TRIPLEX ARTICULATED LOCOMOTIVES FOR THE ERIE

In 1914 the Baldwin Locomotive Works built for the Erie Railroad a Triplex articulated compound locomotive,\* designed in accordance with patents granted to George R. Henderson. This locomotive attracted wide attention because of the novelty of its design and its great hauling capacity. It develops a tractive force, working compound, of 160,000 lb., and in this respect is still unsurpassed, as far as is known, by any other steam locomotive.

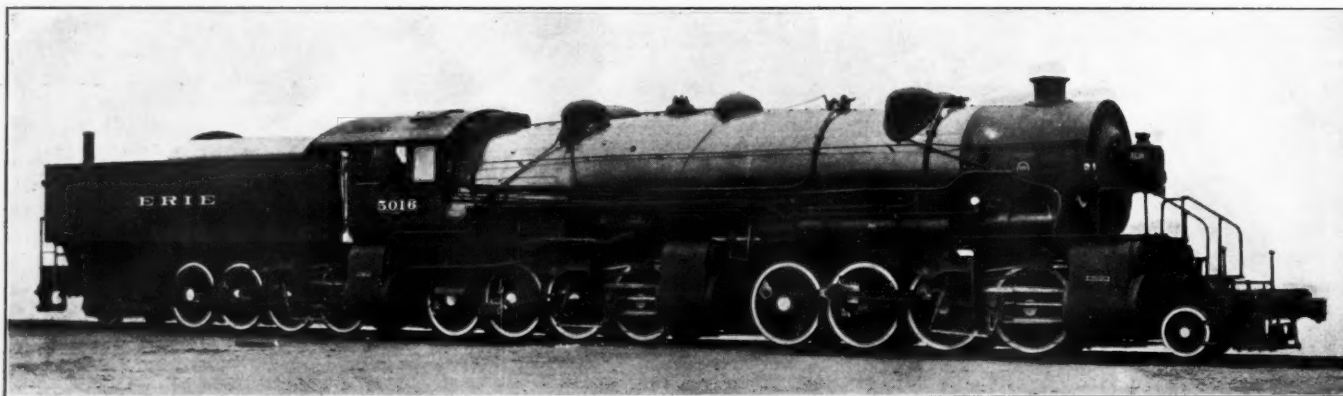
This locomotive has been used in pushing service on the

grate area being 121.5 sq. ft. This is probably the largest grate ever used in a locomotive. The grate bars are divided by longitudinal bearers into three groups, and each group is arranged to rock in two sections. The grates are shaken by power, two operating cylinders being placed low down on the back head. These rotate a transverse steel shaft of  $2\frac{1}{4}$  in. square section on which are mounted suitable arms having square fits and therefore rotating with it. The grate-shaking levers are mounted on bushings which are slipped over the shaft. They may be latched to the fixed levers so that the different sections of the grate may be rocked independently as desired. There are two drop-plates, located right and left in the back of the firebox, and they can also be operated by the power shakers.

The firebox is built with a combustion chamber 54 in. long which extends forward into the boiler barrel. All seams in the firebox and combustion chamber are welded, as are also the seams in the two fire-door openings; and the inside and outside shells are welded to the mud-ring at the corners. The arch tubes extend from the bottom of the combustion chamber to the back sheet of the firebox. A vertical wall is built across the throat of the combustion chamber, and the foot of the arch abuts against the top of this wall.

As the firebox is located above three pairs of driving wheels, the space available for the ash-pan is necessarily limited. A large pan of the Talmage type, however, has been applied. This pan has four hoppers, and provides an air opening amounting to 16.6 per cent of the grate area.

The machinery, running gear, cylinders and steam piping of these locomotives are practically duplicates of those used on the first engine. The rear truck has been moved back one foot, thus lengthening the total wheel base from 90 ft. to 91 ft.; and the capacity of the tank has been increased from 10,000 to 11,600 gallons. The feed water heater under the tank is retained, and the water drawn from the heater is forced into the boiler by a centrifugal pump which is placed



Erie Triplex Locomotive

Susquehanna Hill, where the grade is 1.5 per cent, and where three helper locomotives were formerly required in handling a full tonnage train. The results obtained have been so satisfactory that two additional locomotives of the same hauling capacity as the first one have recently been completed. In general design these locomotives closely follow their predecessor, and the majority of the machinery and structural details are interchangeable in all of them. Based on experience with the first engine, a number of changes have been made, but these in no way affect the general principles on which the locomotive is designed and operated.

Experience with the first engine indicated the desirability of securing additional grate area. Accordingly in the new locomotives, the Gaines bridge wall is omitted, and the grates extend the full length of the furnace, 13 ft. 6 in., the

under the running board on the right hand side. The pump and injector checks are placed well forward on the top center line of the boiler. The front sand boxes are placed right and left on top of the boiler, instead of in the forward cylinder saddle as in the previous design.

This type of locomotive has proved its efficiency for heavy pushing service. As far as its machinery, articulated frame connections and steam piping are concerned, the details are so similar to those of Mallet locomotives that any organization trained to handle Mallets should have no difficulty in caring for the Triplex locomotive. On the Susquehanna Hill grade conditions and tonnage rating are particularly favorable to the use of these locomotives, the three pushers formerly required per train being replaced by one Triplex. Where similar conditions prevail on other lines, the Triplex locomotive is worthy of consideration as a means of reducing the expense of heavy grade operation.

\*For a description of this locomotive see May 8, 1914, issue of the *Railway Age Gazette*, page 1027.



The principal dimensions and data are as follows:

General Data	
Gage .....	4 ft. 8½ in.
Service .....	Pusher
Fuel .....	Bituminous Coal
Tractive effort .....	160,000 lb.
Weight on drivers .....	766,300 lb.
Weight on leading truck .....	32,050 lb.
Weight on trailing truck .....	62,000 lb.
Weight of engine and tender in working order .....	860,350 lb.
Wheel base, driving .....	71 ft. 6 in.
Wheel base, rigid .....	16 ft. 6 in.
Wheel base, total .....	91 ft.
Ratios	
Weight on drivers ÷ tractive effort .....	4.8
Total weight ÷ tractive effort .....	5.4
Tractive effort × diam. drivers ÷ equivalent heating surface .....	1,092.5
Equivalent heating surface* ÷ grate area .....	75.9
Firebox heating surface ÷ equivalent heating surface, per cent. ....	4.7
Weight on drivers ÷ equivalent heating surface .....	83.1
Total weight ÷ equivalent heating surface .....	93.2
Volume equivalent simple cylinders .....	51.32 cu. ft.
Equivalent heating surface* ÷ vol. equiv. simple cylinders .....	179.8
Grate area ÷ vol. equiv. simple cylinders .....	2.4
Cylinders	
Kind .....	Compound
Diameter and stroke (2 H. F. and 4 L. P.) .....	36 in. by 32 in.
Valves	
Kind .....	Piston
Diameter .....	16 in.
Type of valve gear .....	Baker
Wheels	
Driving, diameter over tires .....	63 in.
Driving, thickness of tires .....	3½ in.
Driving journals, main, diameter and length .....	11 in. by 13 1/16 in.
Driving journals, others, diameter and length .....	11 in. by 13 1/16 in.
Engine truck wheels, diameter .....	33 in.
Engine truck, journals .....	6 in. by 12 in.
Trailing truck wheels, diameter .....	42 in.
Trailing truck, journals .....	9 in. by 12 in.
Boiler	
Style .....	Conical
Working pressure .....	210 lb. per sq. in.
Outside diameter of first ring .....	94 in.
Firebox, length and width .....	162 in. by 108 in.
Firebox, plates, thickness .....	tube, ¾ in.; others, ¾ in.
Firebox, water space .....	front, 6 in.; back and side, 5 in.
Tubes, number and outside diameter .....	326—2¼ in.
Flues, number and outside diameter .....	53—5½ in.
Tubes and flues, length .....	24 ft.
Heating surface, tubes and flues .....	6,418 sq. ft.
Heating surface, firebox? .....	433 sq. ft.
Heating surface, total .....	6,851 sq. ft.
Superheater, heating surface .....	1,584 sq. ft.
Equivalent heating surface* .....	9,227 sq. ft.
Grate area .....	121.5 sq. ft.
Tender	
Water capacity .....	11,600 gal.
Coal capacity .....	16 tons

\*Equivalent heating surface = total evaporative heating surface + 1.5 times the superheating surface.

†Includes 108 sq. ft. combustion chambers, and 74 sq. ft. arch tube heating surface.

## CANADIAN RAILWAY COMMISSION APPROVES ADVANCES IN EASTERN FREIGHT RATES

The Railway Commission of Canada on July 6 issued its decision on the application of the railways in eastern Canada for general increases in freight rates, allowing advances in the class rates of from 1 to 6 cents per 100 pounds and a large number of increases in commodity rates. The advances allowed are in many cases less than those proposed by the railways. The advances are approved on the ground that they are necessitated by increases in operating expenses, including wages, and in the cost of fuel and supplies. The commission has issued an official summary of the decision. Regarding the reasons for an increase it says:

"Operating expenses have increased generally. While from 1899 to 1914 train mile earnings increased 89 per cent, the cost of service per train mile increased 112 per cent, notwithstanding economies attributable to increased locomotive power, lower grades, better loading and increased traffic. In the period 1910 to 1914 earnings increased 10.6 per cent; expenses, 17.7 per cent. In 1915 earnings increased 5.3 per cent; expenses, 12.4 per cent.

"Railway ties cost 38 per cent more in 1914 than in 1907; in 1915 they were 45 per cent higher.

"The cost of fuel to operate 100 miles was 30 per cent higher in 1914 and 1915 than in 1907. The average cost

of fuel increased 21.8 per cent in the period 1909 to 1914.

"Salaries and wages represent three-fifths of the total railway expenses. This item has increased rapidly. The wage bill of the Grand Trunk alone increased in the period 1909 to 1914 by 52 per cent, and for 1915 the increase was 50 per cent.

"The increase in labor cost is mainly due to increases in wages, as there have been economies in the number of men employed per 100 miles of track. Decreases in wages are not a feasible means of economizing. The wages on the Grand Trunk have increased by 4.3 per cent since the hearing.

"The Canadian Pacific divisions in eastern Canada are the Atlantic, Eastern, Ontario and Lake Superior. The Atlantic division is operated at a loss. There is but little local traffic on the Lake Superior division. The Canadian Pacific and the Grand Trunk are both engaged in business in the Eastern and Ontario divisions, and here the freight business of the Canadian Pacific gives only 20 per cent of its total freight revenue, and represents only three-fifths of the business done by the Grand Trunk.

"The Grand Trunk was built to meet the needs of eastern Canada. It runs into all the large producing centers; it has a well established and well worked up business. In eastern Canada it does the largest business and obtains the greatest earnings. It is fair to accept for primary consideration the actual results of the Grand Trunk's earnings as a basis of rates. The rates cannot be based on the total capital cost of the Grand Trunk as carried on the company's books, which would represent a cost of \$131,000 per mile.

The new lines of the Canadian Pacific from Glentay to Agincourt and from Toronto Sudbury, cost respectively \$71,000 and \$56,000 per mile. This includes nothing for terminals. The Intercolonial cost, including equipment and terminals, \$75,000 per mile.

"The Hydro-Electric Company has recently made an estimate that 138 miles between Toronto and London would cost \$100,000 per mile, including terminals and equipment.

"The net earnings per mile of line of the Grand Trunk at their highest in 1913 amounted to \$3,500 per mile. In 1914 they were \$3,059 and in 1915 \$2,477.

"The financial relations of the Grand Trunk to the Grand Trunk Pacific, as well as to its United States lines, are analyzed, and it is ruled that outside investments cannot be considered as bearing on the reasonableness of freight rates.

"Economical financing of the Grand Trunk has been rendered extremely difficult, if not impossible. Appropriations of all kinds have been cut and repairs have been postponed. On December 31, 1915, over 4,000 cars were held for repairs, notwithstanding the lighter traffic of the year.

"In order to keep the equipment in proper shape, it will be necessary to obtain 1,249 new freight cars at an expenditure of \$2,238,000. Normal track renewals would require 431 miles; for the period 1913 to 1915, inclusive, the track renewals were only 45 per cent of this standard; and for the year 1915 the renewals fell to 67 miles. The renewal work on bridges and culverts during the year 1915 is \$20,000 below the average yearly expenditure of the period of 1906 to 1915.

"The economies so made cannot continue indefinitely without great loss and inconvenience to the public.

"In the Western rate case, the government expert computed that six per cent should be allowed so as to provide four per cent for interest charges and two per cent for surplus.

"Money is now more expensive. Taking the cost of the Glen Tay-Agincourt line and adding \$10,000 per mile for equipment, the net earnings would have to be \$4,800. If the Toronto-Sudbury line is taken as a basis, net earnings per mile would have to be \$4,001; while if the Intercolonial is taken they would have to be \$4,500.

"Aside entirely from the terminal expenses, the Grand

Trunk net earnings in the best year are far short of these figures.

"The western rates case points out the difference in conditions between eastern and western Canada and, notwithstanding material reductions, the general schedule in the west is higher. The Railway Act requires and the general public interest of the country demands that if practicable eastern rates should be advanced so that the different schedules may more nearly approach a parity.

"The effect of new competing lines, the Canadian Northern, recently constructed, is not considered in striking a reasonable basis. The increases made are justifiable entirely on the mere fact of the increases in Grand Trunk expenses, and having regard to traffic of normal years."

The increases in rates allowed are described as follows:

"Besides the class tariffs of general application, the application of the railway companies comprises over 150 exceptional or special single rates and more or less comparative schedules of exceptional rates, lower than the class rates, applicable to various commodities.

"To quote the judgment—"No flat increase of 5, 10 or other percentage could be applied simply to augment railway revenue. Each rate of notice has to be considered having regard to its reasonableness for the service performed."

"As each of these items has thus been separately dealt with on its merits it is impossible within the limits of a press notice to give any clear synopsis of the board's conclusions. The application with respect to some of the commodity items has been declined and in numerous instances less has been granted than asked for by the railway companies.

"The findings regarding the class tariffs may, however, briefly be summarized. In the territory bounded on the west by, but not including, Port Arthur, and by the Georgian Bay, Lake Huron and Detroit river, and on the east by Quebec and Megantic, also between C. P. R. stations in New Brunswick, the class rates, provided they are now lower than the standard or maximum mileage tariff, may be increased by two cents in the first and one cent in the fifth classes, the rates for the other classes to be properly proportioned in accordance with the standardized scale. An exception is made of the lines of the Canadian Pacific and Canadian Northern between Parry Sound and Sudbury, otherwise no increases are allowed.

"Because of the comparatively lower level of the rates to the Maritime Provinces great increases are permitted. Between points in the provinces of New Brunswick and Nova Scotia and points west of Quebec, Levis and Megantic as far as Montreal and Valleyfield and north of the Ottawa river the first class will be advanced four cents and the fifth class two cents. The other classes in proportion.

"Between the same maritime sections and points west of Montreal the carriers are authorized to increase their rates by six cents for the first class and three cents for the fifth, the remaining rates fitting in from the standardized scale.

"Here, again, an exception is made of the line of the C. P. R. in the St. John River Valley, where the rates, instead of being advanced, will be lowered by the company so as not to exceed the St. John rates, this relief being due to the opening of the National Transcontinental south of Edmundston, N. B.

"As the government railways are not subject to the jurisdiction of the board, the Intercolonial and National Transcontinental management is, of course, free to fix its own rates. Nevertheless, the judgment provides that the through rates of the Grand Trunk, Canadian Pacific and other independent companies in Quebec and Ontario, to Intercolonial points east of St. John, to Halifax and Sydney are to preserve the same differences, if any, over the St. John rates as at present."

Commodity rates have been increased on iron and steel articles by one-half cent per 100 pounds on all rates not over

15 cents per 100 pounds, one cent on rates between 15 and 25 cents, and 1½ cents on rates over 25 cents. Pig iron, billets, wire rods, rails and crop ends bear a rate increase of about five per cent. Cement increases one-half cent per hundred pounds on all rates under 15 cents, and one cent on all rates over 15 cents. On crushed stone, sand and gravel there is a general increase of about five cents per ton. On lumber there is one-half cent of an advance on all rates under 15 cents and one cent on all rates over 15 cents for distances over 60 miles, with an exception covering districts affected by the Ottawa rate.

On paper there is an advance of one to two cents on less than carload movements. On carload shipments the commodity rates advance three-fifths of a cent to districts west of Quebec, Levis and Megantic, and three cents per 100 pounds to districts in New Brunswick, Nova Scotia and Quebec east of Levis.

Hay reverts from the commodity to the tariff rates. Increases on the rates on cattle, sheep and hogs are approximately one cent for distances from 31 to 40 miles, 1½ cents for 46 to 50 miles, and two cents for distances over 50 miles.

There is a 10 per cent increase in coal rates, with a maximum of 10 cents per ton, subject to certain exceptions, which reduce some rates. An advance of five and 10 cents per ton has been allowed on coke.

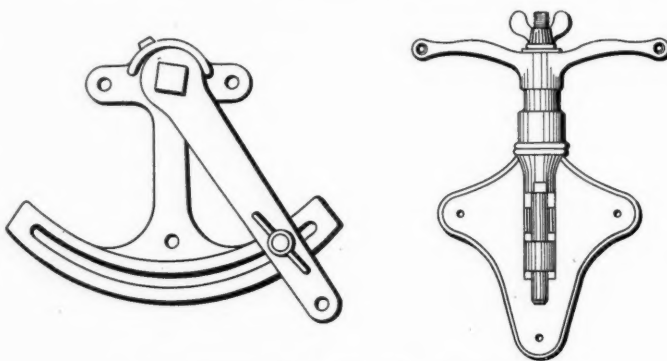
Commodity rates have been abolished on leather so as to restore it to the fourth and fifth class rates.

On canned goods there is a uniform increase of 1½ cents to Quebec points and one to four cents to St. John. On cheese there is an advance of two cents per hundred pounds to Montreal.

The proposed increases on fruits are postponed until they can be considered along with proposed increases in icing and salt for refrigeration, which are now under suspension.

## VENTILATION ACCESSORIES

Two devices for use on the dampers of ventilating ducts have recently received extensive introduction. One is a damper quadrant with which a damper may be secured in any position. It consists entirely of malleable iron parts. The axle of the damper is attached to a short lever which rotates in contact with a frame containing a quadrant slot which is secured to the side of the duct. A wing nut in the end of the lever makes it possible to lock the lever at any



The Damper Quadrant and Damper Clip

point in the length of the quadrant slot, thus insuring a fixed position for the damper.

In the case of dampers which require frequent adjustment where a positive lock would be a source of inconvenience, a damper clip has been provided known as the "Sure Lock Clip." This is provided with one or two handles to which chains may be attached for hand operation and has a special adjustment in the barrel whereby the



dampers is securely held in any position in which it is set.

Ventilating ducts and other sheet metal work require accessories especially adapted to the purpose; thus a special form of screw has been designed to cover the special requirements. The threads of these screws extend the entire length so that the metal may be drawn up flush with the head. The edges of the threads are sharp, causing them to cut into the metal in the manner of a tap. Another feature is that the screw is tapered only at the point, the sides of the screw being parallel for the larger portion of the length. These accessories are manufactured by the Parker Supply Company, New York.

### QUARTERLY ACCIDENT BULLETIN No. 57

The Interstate Commerce Commission has issued Accident Bulletin No. 57 containing the record of railway accidents in the United States during July, August, and September, 1915. The number of persons killed in train accidents was 127 and of injured 1,837. The total number of casualties of all classes reported was 46,049; or 2,531 killed and 43,518 injured. With this bulletin the commission begins its new classification of casualties, announced last year. In the principal totals there is no important change. The injuries to trainmen, fatal and non-fatal, are divided, in table 1B, into 14 classes. A new class, "non-train accidents," includes the cases formerly classed as "industrial." The condensed summary, Table 1, is as follows:

TABLE No. 1—CASUALTIES TO PERSONS—STEAM RAILWAYS

Class	Passengers and persons carried under contract		Employees (including employees not on duty)		Other persons (trespassers and non-trespassers)		Total persons	
	Killed	Inj'd	Killed	Inj'd	Killed	Inj'd	Killed	Inj'd
<i>Train accidents.</i>								
Collisions .....	9	514	31	314	4	13	44	841
Derailments .....	13	481	40	324	21	36	74	841
Miscellaneous, including boiler explosions ..	..	11	8	139	1	5	9	155
Total .....	22	1,006	79	777	26	54	127	1,837
Train-service accidents ..	40	1,431	434	8,589	1,812	2,915	2,286	12,935
Total .....	62	2,437	513	9,366	1,838	2,969	2,413	14,772
Nontrain accidents ..	..	..	100	28,337	18	409	118	28,746
Grand total .....	62	2,437	613	37,703	1,856	3,378	2,531	43,518

Table No. 1A presents figures of the current bulletin, the bulletin next preceding, and that covering the corresponding quarter of the previous fiscal year, as follows:

TABLE No. 1A—CONDENSED SUMMARY OF FATALITIES

No.	Item	Bulletin No. 57 (July, Aug., and Sept., 1915)	Bulletin No. 56 (Apr., May, and June, 1915)	Bulletin No. 53 (July, Aug., 1914)
1—	Passengers killed in train accidents.....	22	2	73
2—	Passengers killed, all causes.....	62	26	117
3—	Employees on duty killed in train accidents..	78	46	73
4—	Employees on duty killed in coupling.....	30	22	27
5—	Employees on duty killed, total.....	438	329	463
6—	Total passengers and employees (items 2 and 5, above) .....	500	355	580
7—	Other persons killed, incl. tresp., nontresp., and employees not on duty, all causes.....	1,936	1,609	2,069
8—	Employees killed in industrial accidents.....	95	94	99
	Grand total (items 6, 7, and 8).....	2,531	2,058	2,748

The non-train accidents—mostly accidents to employees at work (not on or around trains)—are divided, Table 1BA, into 13 classes of accidents and 5 classes of employees; but the number of hours worked, and the "man-hours," reported by the roads, do not appear in the bulletin. The total number of collisions and derailments reported was 2,853 (974 collisions and 1,879 derailments). These are classified as follows:

TABLE No. 2—COLLISIONS AND DERAILMENTS

Classes	Number	Number of persons—		Damage to road and equipment
		Killed	Inj'd	
<i>Collisions:</i>				
Rear .....	92	13	212	\$91,600
Butting .....	77	12	323	118,700
Broken train .....	97	..	9	41,600
Miscellaneous .....	708	19	297	335,900
Total .....	974	44	841	\$587,800
<i>Derailments due to:</i>				
Defects of roadway.....	380	8	206	\$222,600
Defects of equipment.....	964	21	114	805,700
Negligence of trainmen, signalmen, etc....	163	5	79	105,200
Unforeseen obstructions of track, etc....	75	25	222	166,000
Malicious obstruction of track, etc....	27	3	32	41,300
Miscellaneous causes .....	270	12	188	332,000
Total .....	1,879	74	841	\$1,672,800
Total collisions and derailments.....	2,853	118	1,682	\$2,260,600
Total for same quarter of—				
1914 .....	3,085	172	2,329	\$2,342,511
1913 .....	3,913	208	3,760	3,239,159
1912 .....	3,935	276	4,100	3,366,401

The bulletin gives the usual tables classifying certain kinds of accidents in detail, all shown (for employees) under the 14 heads above mentioned.

Twenty-one accidents occurring during this quarter were investigated by the inspectors of the commission and the reports of these investigations fill 40 pages of the bulletin. The accidents occurred as follows:

Spokane & Inland Empire and Idaho & Wash.

No.—McGuire, Idaho .....	July 1	Side collision
Chic., Mil. & St. Paul—Rainier, Wash.....	" 3	Derailment
Denver, Boulder & West.—Salina, Colo....	" 5	Derailment
Minneapolis & St. Louis—Haydenville, Minn..	" 7	Derailment
Norfolk & Western—Roanoke, Va.....	" 22	Butting collision
Chic., Rock Island & Pac.—Mickles, Ark....	" 29	Rear collision
Missouri, Kan. & Tex.—Lockhart, Tex.....	" 30	Derailment
Chic., Rock Island & Pac.—Waveland, Ark....	Aug. 1	Butting collision
N. Y., N. H. & H.—Atlantic, Mass.....	" 4	Side collision
Norfolk & Western—Swords Creek, Va.....	" 5	Derailment
Pitts., Cinn., Chic. & St. L.—Cumberland, Ind..	" 9	Derailment
Balt. & Ohio So. West.—Orient, Ohio.....	" 12	Rear collision
Ches. & Ohio—Altman, W. Va.....	" 17	Derailment
Southern Pacific—Riverdale, Ore.....	" 20	Butting collision
Colorado Midland—Idlewild, Colo.....	" 27	Butting collision
Norfolk & Western—Welch, W. Va.....	" 28	Butting collision
Missouri, Kan. & Tex.—Smithville, Tex....	Sept. 1	Butting collision
Denver & Rio Grande—Deen, Colo.....	" 8	Butting collision
Memphis, Dallas & Gulf—Bingen, Ark.....	" 9	Butting collision
Kansas City, Mex. & Orient—Mertzon, Tex..	" 9	Derailment
Missouri Pacific—Plattsmouth, Nebr.....	" 24	Butting collision

*Electric Railways* reporting to the commission (not included in the foregoing statistics) had 150 persons killed during the quarter and 1,303 injured; and there were 30 collisions and 18 derailments. Train accidents are charged with 5 fatalities. The total number of passengers killed from all causes was 9; and of employees 14 (5 non-train accidents). The number of trespassers struck or run over by cars was 63; 46 killed and 17 injured.

**THE AUTOMOBILE INDUSTRY.**—During the year, 1914 to June, 1915, about 600,000 automobiles were built in the United States, as compared with 445,000 during the preceding year. It is believed that the total production for 1916 will be about 900,000.

**THE MURMAN RAILWAY OF RUSSIA.**—More than 15,000 men are working on the Murman Railway, which will be completed in August or September. The terminus of the Murman Railway is an ice-free port on the Arctic Ocean, 700 miles north of Petrograd.

**DISCHARGED PRUSSIAN SOLDIERS AS TICKET COLLECTORS.**—It is stated that in future as many armless and one-armed men discharged from the army as possible will be employed on the Prussian State railways as ticket collectors. A ticket-punching apparatus worked by the feet has been adopted.

## General News Department

A fire at the shops of the Seaboard Air Line, at Portsmouth, Va., July 6, destroyed the coach shed and ten passenger cars; estimated loss, \$100,000.

The Southern Pacific has announced an increase of wages of 25 cents a day for all section laborers, except Mexicans and Chinese, employed on its lines in California, Nevada, New Mexico and Arizona.

The United States Civil Service Commission announces examinations August 28 and 29 for the positions of inspector of safety appliances and inspector of hours of service under the Interstate Commerce Commission; salary, \$1,800 a year. Applicants must be between 25 and 50 years of age. Persons who desire to take the examinations should apply to a civil service board for form 1933.

Herbert Deeming, for 13 years secretary of the Chicago General Managers' Association and the Association of Western Railways, has become associated with D. C. Buell in the management of the Railway Education Bureau at Omaha, Neb. His headquarters will be in Chicago temporarily, but later at Omaha. Mr. Deeming was formerly chief clerk to the president and general manager of the Chicago & Western Indiana railroad and the Belt Railway of Chicago.

The employees of the Pullman Car Works, Pullman, Ill., have organized a baseball league to consist of 10 competing teams. J. S. Runnells, president of the Pullman Company, has offered a permanent cup for the winning team and a set of medals for the individual members. The company will furnish uniforms and all necessary incidental equipment. LeRoy Kramer, vice-president of the Pullman Company, has been made honorary president of the league; R. Thompson is president, C. Swingle, vice-president; E. A. Backlin, secretary-treasurer.

The board of directors of the Pennsylvania Railroad at its meeting on June 12 authorized an appropriation not to exceed \$100,000, to be expended under the direction of the proper executive officers for the relief of the families and dependents of employees who have been enlisted in the army or navy of the United States through membership in the national guard or otherwise, and who have been called into active service. Each case will be dealt with on its own merits, so that the relief will in every case be directed into channels where there is an established necessity for its application.

Anderson Pace, manager of the Bureau of Railway Publicity of Illinois, has sent out a circular and also has published an advertisement in Chicago newspapers announcing the organization of the bureau by the railway companies operating within the state of Illinois, for the purpose of promoting "a better acquaintance between the public and the railways of Illinois, a better understanding by the railways of what the public wants and thinks, a better understanding by the public of railway needs and problems, and increased co-operation between the railways and those whom they serve."

### Violent Storm in the Gulf States

Railroads throughout large sections of the states of Florida, Mississippi, Louisiana and Alabama sustained great damage from a tropical hurricane moving inland from the Gulf of Mexico on July 5. After striking the vicinity of Pensacola, Fla., and Mobile, Ala., it moved through southern Mississippi as a violent rainstorm which caused washouts all through that section and much damage to bridges. At Bond, Miss., on the Gulf & Ship Island, an engineman and a fireman were killed in a derailment caused by a washout. Near Pensacola, a Louisville & Nashville bridge, three miles long, over the Escambia Bay, was washed out, necessitating a long detour for eastern traffic. Several days elapsed before conditions were generally restored to anything approaching normal.

### Georgia's State Railroad

In accordance with recommendations contained in the report of the Western & Atlantic releasing commission of the state of Georgia, a bill has been introduced into the legislature, which is now in session, amending the releasing act by providing that the next lessee, with the written consent of the governor, may sublet trackage rights. This was previously prohibited. Another bill would give the commission complete authority to handle all matters pertaining to encroachments on the right of way. The commission, in its report, states that it is investigating the ownership of property by the state at St. Mary's, in connection with the proposed construction of deep-water terminals at that port. The commission has not yet reached any conclusions as to the extension to the sea. The report contains an appreciation of the aid extended by John Howe Peyton, president, and Hunter McDonald, chief engineer of the Nashville, Chattanooga & St. Louis, present lessee.

### Slow Orders and Hand Signals\*

Inspectors spoke of the necessity of men being very careful when working at a bridge where there is a slow order, not to wave at engineer on passing trains and not to make any signal with the hands, as the engineer is liable to mistake it for a "high ball" and not slacken speed across the bridge. Cases were cited in the past where the engineer approaching with his train to where men were working waved with his hand at the foreman in charge, who returned the salute by waving his hand; and the engineer thought, or pretended he thought, it was the go ahead signal, and did not slacken speed; an accident resulted and the foreman received the blame.

It was decided that if the engineer waves or signals to the foreman, and foreman feels that he must acknowledge the courtesy, then the best thing to do is to nod the head; but in any case keep the hands down so that nothing can be construed as a signal to continue at regular speed. In case of an accident where slow orders have been disregarded, if the foreman has waved or signaled in any way to the engineer, then the engineer can easily lay all blame on the foreman.

### American Shipbuilding During the Year Ended June 30, 1916

The Bureau of Navigation, Department of Commerce, reports that 1,030 vessels of 347,847 gross tons were built in the United States and officially numbered during the fiscal year ended June 30, 1916, compared with 1,266 vessels of 215,711 gross tons during the fiscal year ended June 30, 1915. The seaboard yards have built 35 large steel merchant steamers aggregating 191,859 gross tons, the largest merchant steel output in their history. Of these, 21 steamers are each over 5,000 gross tons, the largest being the H. H. Rogers of 10,050 gross tons; and 14 are between 3,000 and 5,000 gross tons each. The Newport News Shipbuilding and Dry Dock Company built 6 of 40,329 gross, Maryland Steel Company, Sparrows Point, Md., 8 of 35,665 gross, Union Iron Works, San Francisco, Cal., 5 of 32,665 gross, New York Shipbuilding Company, Camden, New Jersey, 7 of 32,164 gross, and Fore River Shipbuilding Company, Quincy, Mass., 4 of 24,932 gross. The Newport News, Camden and Quincy yards were also engaged in naval construction. Of these steel ocean steamers 24 of 138,858 gross tons have been registered for foreign trade, 8 of 34,386 gross tons enrolled for the coasting trade, one, of 6,034 gross tons, was sold to Norwegians and up to June 30 the two remaining had not been documented. Of the relatively small output of the Great Lakes, 8 vessels of 14,775 gross tons are each under 2,500 tons, built for the ocean trade of which 4 are for foreign trade and one has been sold to Norwegians.

\*From the Minutes of a Frisco Staff Meeting.



## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY, 1916

Name of road.	Average mileage operated during period.	Operating revenues—			Maintenance of—			Operating expenses—			Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.)	Way and structures.	Equip-ment.	Traffic.	Trans-portion.	Miscel-laneous.	General.	Total.			
Alabama & Vicksburg .....	143	\$98,347	\$38,322	\$136,669	\$14,811	\$30,330	\$3,721	\$48,059	\$2,121	\$5,448	\$104,344	\$8,535	\$56,543	\$23,011
Alabama Great Southern .....	309	406,504	106,467	512,971	108,993	108,993	13,795	141,601	3,142	9,394	225,999	16,433	209,544	118,959
Atchison, Topeka & Santa Fe .....	8,626	7,375,183	2,044,423	9,419,606	1,418,229	1,404,204	174,032	2,646,442	3,142	192,464	5,830,536	465,317	3,938,088	1,291,788
Atlanta & West Point .....	93	60,650	29,467	90,117	113,477	21,183	6,677	14,308	2,018	5,021	32,338	6,564	23,888	9,011
Bessemer & Lake Erie .....	205	1,099,037	29,467	1,128,504	131,801	195,997	10,539	252,902	.....	12,841	591,024	22,002	532,191	—5,810
Boston & Maine .....	2,302	3,016,688	1,250,856	4,267,544	476,575	585,852	35,782	1,894,086	20,971	101,091	3,114,355	171,881	1,488,873	733,905
Buffalo, Rochester & Pittsburgh .....	586	943,347	98,103	1,041,450	141,383	267,553	13,264	334,899	1,693	22,147	781,179	30,000	283,063	65,259
Chicago, Burlington & Quincy .....	3,969	6,127,408	1,605,979	7,733,387	1,474,349	1,395,924	131,966	2,440,487	106,289	178,187	2,869,712	369,343	2,500,370	1,191,858
Chicago Great Western .....	1,496	330,050	243,808	573,858	205,366	207,844	48,835	435,560	8,612	38,556	939,832	45,744	198,660	37,568
Chicago Junction .....	13	.....	.....	206,507	18,949	19,110	1,176	113,950	.....	5,063	160,247	2,273	43,986	15,647
Chicago, Milwaukee & St. Paul .....	10,210	6,699,481	1,492,250	8,191,731	1,440,355	1,595,079	181,774	3,087,107	57,709	162,320	6,424,679	387,638	2,291,495	601,863
Chicago, Rock Island & Pacific .....	7,559	4,140,169	1,386,663	5,526,832	803,674	1,605,226	130,307	2,116,228	39,333	150,531	4,230,850	297,392	1,444,338	646,710
Chicago, St. Paul, Minneapolis & Omaha .....	1,753	1,026,599	393,556	1,420,155	243,416	217,961	28,922	562,667	16,151	40,515	1,108,205	83,462	359,384	100,530
Cincinnati, New Orleans & Texas Pacific .....	337	819,800	140,571	960,371	93,773	247,665	6,644	271,925	6,644	26,786	676,121	32,000	319,558	70,594
Cleveland, Cincinnati, Chic. & St. Louis .....	2,385	4,693,113	776,003	5,469,116	407,920	711,699	89,350	1,265,207	22,680	67,815	2,561,668	135,000	1,130,123	241,462
Cumberland Valley .....	164	223,046	54,658	277,704	54,935	27,723	5,091	82,068	1,165	8,853	178,541	5,960	108,672	44,830
Delaware & Hudson Co.—R. R. Dept. ....	857	3,904,695	215,895	4,120,590	180,872	368,862	28,422	778,150	20,134	83,068	1,459,508	58,650	735,810	92,729
Delaware, Lackawanna & Western .....	955	3,292,963	713,006	4,005,969	463,151	596,944	75,935	1,362,290	31,782	74,429	2,642,495	202,500	1,618,061	374,188
Denver & Rio Grande .....	2,577	1,570,310	318,537	1,888,847	348,243	348,243	46,356	486,667	23,062	48,460	1,155,824	888,805	798,755	90,000
El Paso & Southwestern Co. ....	1,027	852,345	133,799	986,144	94,878	124,798	18,437	239,991	6,221	27,783	512,108	37,329	483,293	248,147
Elgin, Joliet & Eastern .....	748	1,197,737	141,710	1,339,447	136,729	256,956	7,702	354,407	.....	21,324	776,419	38,529	461,934	180,272
Florida East Coast .....	745	463,655	30,561	494,216	76,508	75,186	7,251	183,313	5,009	18,409	364,744	33,613	320,007	7,803
Gulf & Ship Island .....	308	135,237	30,561	165,798	12,951	26,943	3,247	38,595	286	7,259	89,281	5,929	80,702	31,368
Hocking Valley & West. Texas .....	350	611,804	68,918	680,722	68,375	181,090	8,125	204,925	.....	15,203	477,718	43,200	229,661	65,922
Houston, East & West Texas .....	191	89,367	29,709	119,076	3,907	16,976	1,213	41,310	764	3,342	68,103	5,108	54,341	22,299
Illinois Central .....	4,767	4,455,225	1,082,909	5,538,134	836,217	1,477,905	100,371	1,811,303	31,644	149,843	4,397,117	296,400	1,288,733	608,177
International & Great Northern .....	1,159	622,195	153,934	776,129	113,830	119,113	24,136	338,225	4,433	29,099	609,190	30,000	195,487	106,347
Kansas City Southern .....	836	727,342	129,525	856,867	81,995	124,885	27,406	282,133	.....	33,446	545,575	48,376	346,571	80,381
Lake Erie & Western .....	900	529,176	56,823	586,000	74,260	107,465	14,357	198,406	.....	12,065	406,753	25,000	184,088	110,511
Lehigh & New England .....	296	174,628	1,354	175,982	38,653	30,891	1,936	59,039	.....	5,749	136,242	8,820	46,387	—66,574
Louisiana & Arkansas .....	278	114,943	16,084	131,027	24,454	19,983	3,619	35,228	.....	4,242	87,526	7,941	39,095	—14,671
Louisiana Ry. & Navigation Co. ....	351	127,308	27,247	154,555	165,663	26,575	6,596	55,985	.....	6,466	120,175	9,500	36,008	2,666
Maine Central .....	1,220	707,130	263,226	970,356	147,507	161,339	12,425	367,874	2,352	29,546	720,974	49,605	272,536	102,543
Michigan Central .....	1,803	2,545,210	389,205	2,934,415	472,330	515,796	66,412	1,311,517	50,271	69,351	2,485,678	140,000	1,213,175	565,364
Midland Valley .....	1,380	116,216	37,021	153,237	28,467	32,059	2,665	39,678	.....	6,534	108,762	7,549	44,567	38,892
Missouri & North Arkansas .....	365	651,199	32,345	683,544	104,144	17,379	3,475	37,630	.....	5,792	91,086	5,800	7,136	31,070
Missouri Pacific .....	3,931	2,129,412	393,708	2,523,120	487,503	794,313	78,995	974,827	6,362	64,206	2,400,773	99,640	238,006	—66,299
Monongahela .....	108	162,734	9,023	171,757	26,008	16,441	922	37,546	.....	3,974	84,892	4,000	85,658	.....
Morgan's L. & Texas R. R. & S. Co. ....	404	268,692	82,704	351,396	63,721	63,721	12,285	130,176	2,233	11,505	275,824	27,667	77,945	41,751
Nashville, Chattanooga & St. Louis .....	1,231	798,327	224,627	1,022,954	151,711	182,375	56,003	372,302	9,129	36,394	806,809	300,542	273,430	128,960
Nevada Northern .....	165	167,376	12,551	179,927	184,784	18,061	532	29,055	27	3,824	62,976	6,185	115,624	35,949
New Orleans & North Eastern .....	204	248,995	49,642	298,637	32,384	42,283	10,528	97,884	5,343	12,048	198,805	16,500	133,579	56,752
New Orleans, Mobile & Chicago .....	402	157,795	24,621	182,416	28,703	26,117	4,308	58,095	137	7,400	124,752	6,500	58,956	29,008
New Orleans, Texas & Mexico .....	286	100,849	26,298	127,147	134,893	23,410	5,268	44,829	.....	9,729	117,891	1,561	15,427	20,110
New York Central Railroad .....	6,093	12,496,871	4,029,197	16,526,068	1,901,593	3,262,388	260,080	6,237,911	236,154	383,448	12,281,576	672,020	6,188,873	2,079,184
New York, Chicago & St. Louis .....	570	1,166,351	101,286	1,267,637	131,337	203,824	44,975	460,174	4,485	21,374	844,768	45,000	428,515	305,963
St. Louis & San Francisco .....	4,750	3,019,787	948,303	3,968,090	616,948	854,686	71,771	1,224,934	.....	101,546	2,830,083	173,591	1,207,697	300,988
St. Louis, Brownsville & Mexico .....	548	138,228	63,096	201,324	30,584	20,207	7,222	71,216	.....	10,197	135,864	8,000	73,347	11,138
St. Louis, Iron Mountain & Southern .....	3,555	2,242,654	491,165	2,733,819	573,708	802,298	76,739	799,213	11,536	65,868	2,314,413	129,833	485,526	11,596
St. Louis Southwestern .....	943	527,008	105,054	632,062	73,570	113,960	31,185	171,281	2,803	25,011	417,455	46,831	209,697	52,898
San Antonio & Arkansas Pass. ....	724	177,880	67,929	245,809	55,922	47,433	7,180	144,702	.....	12,863	267,997	11,000	—13,550	27,815
San Pedro, Los Angeles & Salt Lake .....	1,154	693,789	244,260	938,049	126,842	126,842	31,793	271,700	.....	18,439	563,116	49,228	413,050	118,791
Seaboard .....	3,449	1,515,123	362,390	1,877,513	255,907	302,855	72,931	697,700	10,317	68,840	1,408,412	101,281	575,127	88,791
Southern .....	7,027	4,257,849	1,423,869	5,681,718	706,826	1,053,915	154,119	1,857,378	40,910	173,905	3,969,965	260,920	2,421,823	684,288
Tennessee Central .....	294	112,332	33,819	146,151	23,001	20,110	6,296	50,536	.....	7,140	107,086	4,683	42,309	20,335
Texas & Pacific .....	1,944	989,628	333,209	1,322,837	123,413	282,211	41,935	619,169	.....	51,719	1,126,686	72,000	233,955	157,362
Toledo & Ohio Central .....	436	399,295	48,669	447,964	79,932	114,776	7,162	177,513	1,601	3,743	391,347	23,539	70,831	35,320
Toledo, Peoria & Western .....	248	58,301	33,754	92,055	16,458	24,389	2,428	37,018	.....	3,363	84,037	6,500	8,058	70,831
Toledo, St. Louis & Western .....	451	464,469	30,012	494,481	62,591	69,631	16,750	156,064	.....	8,012	312,904	20,600	190,073	130,004
Union R. R. of Pennsylvania .....	31	.....	.....	524,039	53,395	106,024	117	199,436	.....	4,072	364,798	7,000	152,241	—7,001
Vicksburg, Shreveport & Pacific .....	171	79,112	40,355	119,467	13,446	12,148	3,646	40,352	2,202	5,784	89,497	12,030	32,919	28,961
Virginian .....	505	567,251	34,975	602,226	64,921	105,499	5,659	128,340	.....	16,949	335,313	26,900	285,176	108,720
Western Maryland .....	689	847,336	77,607	924,943	157,577	289,802	21,383	289,802	12,524	20,656	310,884	31,500	358,536	97,367
Western Ry. of Alabama .....	133	69,519	33,121	102,640	114,307	20,870	6,189	30,507	1,870	5,370	86,273	5,341	22,110	11,571

### Transportation of the National Guard

Following a meeting of the military committee of the passenger traffic officers of the western railroads at Chicago on July 7, E. L. Bevington, chairman of the Transcontinental Passenger Association, gave out a statement as a reply to some of the newspaper criticisms regarding the transportation of the National Guard. He said in part:

"Some of the published criticisms of the railroads and of the government regarding the method of transporting the National Guard to the Mexican border fail to take into consideration the conditions under which the movement had to be handled.

"The principal objection seems to be the fact that it was necessary to transport some of the troops for a part of the way in day coaches, instead of in sleeping cars. The regulations of the war department for this traffic do not provide for the use of standard sleeping cars, except for officers.

"If all of the tourist sleeping cars in the United States could have been placed at the disposal of the war department and assembled at the mobilization camps at once it would have taken nearly six weeks to transport the entire 120,000 men to the border, if they all required sleeping car equipment.

"Cars were placed at the disposal of the government as rapidly as possible, but it must be remembered that they were scattered all over the country and that it took time to move them. Neither the railroads nor the Pullman Company had any advance notice of the emergency, although by prior arrangement with the war department routes had been arranged in advance for the movement of troops from every military post in the United States, so planned as to distribute the traffic among the railroads, to avoid congestion on any one line, to secure the most direct route and to enable cars and engines to be brought into service in the shortest possible time.

"However, as compared with the experience during the Spanish war in 1898, the movement has been handled with remarkable precision. Great credit is due to Col. Chauncey B. Baker, deputy quartermaster-general at Washington, for the foresight he displayed in co-operating with the railroads long in advance, in planning the routings and as many of the arrangements as could be planned in advance, without which provision delays and congestion must inevitably have occurred."

Representative Charles Bennett Smith, of Buffalo, has offered a resolution in the National House of Representatives calling upon the Committee on Interstate and Foreign Commerce to "conduct an inquiry for the purpose of determining the cause and fixing the responsibility for the failure of the railroads to provide adequate and proper accommodations to transport the National Guard of New York to the Mexican border," and asking that "the committee recommend to Congress such remedies as may be deemed fit to prevent a recurrence of the conditions described, and a punishment of the person or persons responsible for them."

The resolution says: "The railroad facilities provided for transporting the National Guard of the State of New York to the Mexican border are said to have been indescribably bad, three men being compelled in many instances to occupy one seat, and no sleeping accommodations of any kind having been furnished, except for the officers of the regiments.

"Great suffering has resulted from the failure of the railroads to provide suitable and necessary equipment to meet the requirements of the situation.

"Sufficient time was given the railroads to provide an adequate number of cars, and to supply at least the ordinary comforts of travel to the members of the New York National Guard on their way to the border to protect American lives and property."

### MEETINGS AND CONVENTIONS

*The following list gives names of secretaries, date of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.*

- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Annual meeting, August 16-18, 1916, Memphis, Tenn.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th street, New York. Annual convention, October 9-13, Atlantic City, N. J.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York. Annual convention, October 9-13, Atlantic City, N. J.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, 11 Illinois Central, Chicago. Annual meeting, August 24-26, 1916, Hotel Sherman, Chicago.

- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Annual convention, October 10, 1916, Waldorf-Astoria, New York.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month. Room 1856, Transportation Bldg., Chicago.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next meeting, August 15-17, 1916, Hotel Sherman, Chicago.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn. Annual meeting, August 29 to September 1, Hotel Sherman, Chicago.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 12-14, 1916, "The Breakers," Atlantic City, N. J.
- NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.
- NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting 3d Friday in month, except June, July and August, 29 W. 39th St., New York.
- NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.
- PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.
- RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.
- RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.
- RAILWAY FIRE PROTECTION ASSOCIATION.—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October 10, 1916, Chicago.
- RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September 12-14, 1916, Grand Hotel, Mackinac Island, Mich.
- RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. Next annual convention, September 19-22, 1916, New York.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.
- SALT LAKE TRANSPORTATION CLUB.—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.
- SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.
- SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Piedmont Hotel, Atlanta.
- TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Booddy House, Toledo.
- TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.
- TRAFFIC CLUB OF NEWARK.—Roy S. Bushy, Firemen's Bldg., Newark, N. J. Regular meetings, 1st Monday in month, except July and August, The Washington, 559 Broad St., Newark.
- TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.
- TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Agent, Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings, bi-monthly, Pittsburgh.
- TRAFFIC CLUB OF ST. LOUIS.—W. S. Crilly, 620 South 7th St., St. Louis, Mo. Annual meeting, December 5, 1916. Noonday meetings, October to May.
- TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.
- TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio. Next meeting, September 5-8, 1916, Hotel Sherman, Chicago.
- UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.
- WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.
- WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Grand Pacific Hotel, Chicago.
- WESTERN SOCIETY OF ENGINEERS.—E. N. Layfield, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings. Annual meeting, 1st Wednesday after 1st Thursday in January, Chicago.



## Traffic News

T. C. Tipton, hitherto freight agent of the Fort Smith & Western, at Atlanta, has been chosen traffic manager of the Jacksonville Traffic Bureau, Jacksonville, Fla., and will take up his duties July 15. The Jacksonville Traffic Bureau is an incorporated concern, succeeding the traffic department of the Jacksonville Chamber of Commerce. Its president is John Ball.

The American International Terminal Company has been organized under the laws of Delaware, with a capital of \$100,000, to study the problems of railway, steamship, and industrial terminals, apparently at New York City, with the purpose of providing better facilities for the extension of export trade. This concern seems to be a combination of interests connected with the National City Bank, of New York, and Stone & Webster. W. H. Lyford, general counsel of the Chicago & Eastern Illinois, has been retained as consulting expert by the new company.

The New York, New Haven & Hartford had to extend its temporary embargo on traffic moving via the Harlem river and Maybrook gateways to July 12, the congestion having continued to increase. The accumulation of freight was caused in part by the holiday interval; by the New England troop movement to the Mexican border, and the heavy summer and Independence Day travel. A large number of freight engines had to be used in passenger service, necessitating some curtailment in freight service. On June 3 there were 1,758 cars being held under demurrage; on July 1 this had decreased, through better assistance of consignees, to 994 cars. The company calls for the continued co-operation of consignees and asks them not to order in excess of actual requirements.

### Ticket Frauds on the New York Central

The Interstate Commerce Commission has suspended a paragraph in a tariff of the West Shore division of the New York Central, giving notice that commutation tickets will not be sold to passengers who have misused such tickets; and public hearings have been held in New York City on the question of the reasonableness of such a provision. The paragraph in question, which has been in force several months on other divisions of the New York Central, in connection with tariffs which name intrastate rates only, is as follows:

In consideration of the reduced rate at which monthly commutation tickets are sold, their limitations must be strictly observed, and no commutation ticket will be sold to any person who, having previously purchased such a ticket, shall have used it, or permitted it to be used, in violation of the provisions therein contained.

Officers of the road think that their traffic has suffered many thousands of dollars annually by the misuse of commutation tickets. Merchants and others buy tickets and sell coupons, to persons not entitled to ride on them, at rates much below the single-ticket fares. For example, the monthly commutation rate from Poughkeepsie to New York, 73 miles, is but 28 cents a trip, while the regular one-way fare is \$1.58, and the single round-trip fare is \$2.80, leaving a margin of \$1.30 on a single ride and \$2.24 on a round-trip.

It is said that some of these scalpers have made such large profits that the lifting of a book by a conductor, when wrongfully used, has not deterred them; they have bought more books.

**RAILWAY EXTENSION IN ARGENTINA.**—The Buenos Aires Western Railway was authorized by a decree of February 7, 1916, to build a branch line extending westward for 100 miles from Colonia Alvear (Mendoza).

**NEW LOCOMOTIVES FOR THE SOUTH AFRICAN RAILWAY.**—The South African Railway has recently received five large locomotives, built by the North British Locomotive Company, according to the designs and specifications of the railway's chief mechanical engineer. These engines, which are of the Mallet compound type, are said to be the largest in the world to run on the 3-ft. 6-in. gage. It is probable that these locomotives will be assigned to the Witbank Line, in the Transvaal, where the coal traffic is heavy.

## Commission and Court News

### INTERSTATE COMMERCE COMMISSION

A complaint on behalf of Newark, Jersey City, Hoboken and Elizabeth has been filed with the commission asking: That rates to and from New Jersey cities on traffic shipped to or from trunk line territory and beyond, via the trunk line railroads, with terminals at Jersey City, Hoboken and Weehawken, N. J., be established lower than those charged by the same lines on traffic to and from New York and Brooklyn, to and from the same territory, to the extent of the difference of the cost of service. That reciprocal switching arrangements and reasonable joint rates be established for the interchange of freight between the railroads having their terminals at Jersey City, Hoboken and Weehawken at a reasonable distance from these terminals; that all freight originating at and delivered to the defendant railroads at Jersey City, Hoboken or Weehawken be required to be given the same handling and dispatch as New York tonnage, and that all freight consigned to New Jersey towns be allowed the same period of free storage as New York and Brooklyn.

#### Rates on Salt

*Swift & Co. v. Union Pacific et al.:*

A rate of 27½ cents per 100 lb. on bulk salt in carloads from Kansas producing points to Fort Worth and North Fort Worth, Tex., is found unreasonable and maximum rates are prescribed for the future. (39 I. C. C., 665.)

#### Livestock Switching at Nashville, Tenn.

*Nashville Abattoir, Hide & Melting Association et al. v. Louisville & Nashville et al. Opinion by Commissioner Clark:*

Defendant's refusal to deliver and receive carload shipments of live stock at complainant's private siding in Nashville, Tenn., found not to be unreasonable or discriminatory. (40 I. C. C., 134.)

#### Lumber from Louisiana Points

*Opinion by Commissioner Meyer:*

A proposed cancellation of joint through rates on yellow-pine lumber from producing points on the Louisiana Western, the Lake Charles & Northern and Morgan's Louisiana & Texas to points on the Santa Fe system in Texas is found not justified. (39 I. C. C., 688.)

#### Grain to Arkansas Points

*Opinion by the Commission:*

A proposed cancellation of joint rates on grain in carloads from points in Kansas and Missouri on the St. Louis & San Francisco by way of Bridge Junction, Ark., to points in Arkansas on the Rock Island is found justified in part. Schedules under suspension are ordered cancelled, but without prejudice to respondents' right to file a new tariff conforming to the findings herein. (40 I. C. C., 49.)

#### Lumber from Helen, Ga.

*Byrd-Matthews Lumber Company et al. v. Gainesville & Northwestern et al. Opinion by Commissioner Clements:*

The present adjustment of rates on lumber to Cincinnati, Ohio, and other Ohio river crossings from Helen, Ga., and from Murphy, N. C., and certain other points in North Carolina on the lines of the Southern Railway is found prejudicial to Helen, and a reasonable relationship is prescribed. (40 I. C. C., 116.)

#### Rates from New Orleans, La., to Tulsa, Okla.

*Opinion by Commissioner Hall:*

The commission finds that the class rates from New Orleans, La., to Tulsa, Okla., are not unreasonable. Rates on certain commodities from New Orleans, and Galveston, Tex., are also not found unreasonable but a readjustment of rates to certain

Oklahoma points is suggested. Applications of defendants for relief from the long-and-short-haul provision of the fourth section with respect to lower class and commodity rates from New Orleans to Joplin and Neosho, Mo., than to Tulsa, Okla., are granted. (40 I. C. C., 9.)

#### Illinois Grain to Chicago

*In the matter of rates applicable on grain from points in Illinois, via Chicago, to interstate destinations. Opinion by Commissioner Clark:*

The principal question involved in this controversy is whether the interstate or the intrastate rates should be charged to Chicago, Ill., on grain originating at points in Illinois, billed to Chicago, and there stored in, or transferred through, elevators and ultimately moved therefrom on local rates to destinations beyond the limits of the state. In nearly every instance the interstate rate on grain from Illinois points to Chicago is higher than the intrastate rate.

The commission finds as follows:

Grain originating in Illinois, shipped locally intrastate to Chicago, there sold, and subsequently shipped all rail under local rates, or via lake, to interstate destinations, is subject to the local intrastate rates from points of origin to Chicago.

Grain originating in Illinois, moving interstate to Chicago via the Elgin, Joliet & Eastern, unloaded into elevators at Chicago, and subsequently shipped via lake under independent water line rates or charges, is subject to the local interstate rates from points of origin to Chicago. (40 I. C. C., 124.)

#### Hardwood Lumber Reshipped from Nashville

*Nashville Lumbermen's Club v. Louisville & Nashville et al. Opinion by Commissioner Harlan:*

The rates and regulations applying on hardwood lumber shipped to Nashville, Tenn., and subsequently reshipped to points north of the Potomac and Ohio rivers are not found unreasonable or discriminatory.

Discrimination was alleged because a lumber dealer at any of the Ohio river crossings may bring hardwood lumber from mills in Tennessee, Louisiana, Mississippi, Alabama, Florida and Georgia into his lumber yards and there assort, grade, dry and dress it and, after storing it for an indefinite period, may finally ship it out to the markets in official classification territory, paying through charges from the mills to the ultimate destination based on the rates to and from the crossing. Nashville is not a rate-breaking point, as are the Ohio river crossings; and lumber originating at stations on the Nashville, Chattanooga & St. Louis or on the Tennessee Central takes the local rate into Nashville and, when reshipped, the established local charge from Nashville to the ultimate destination is exacted, making through charges from the mills that, as a rule, exceed the combination of rates on the Ohio river crossings by from 0.1 cent to 5 cents per 100 lb. (40 I. C. C., 59.)

#### Cement to Texas Points

*Opinion by Commissioner Daniels:*

The Kansas City, Mexico & Orient of Texas, in connection with the St. Louis & San Francisco, participated in an 18½-cent rate on Portland cement from Ada, Okla., to the first three points on its line in Texas. It also participated in a 22½-cent rate to the same points from Harry's and Eagle Ford, Tex., in connection with the Texas & Pacific and Fort Worth & Denver City, the distance from the latter points being slightly less than from Ada. Moved by an attack threatened upon its intrastate rates unless the interstate rates from Ada were increased, and failing to obtain the assent of the St. Louis & San Francisco to such increases, the Kansas City, Mexico & Orient of Texas directed the cancellation of rates on cement from Ada to all points on its line in Texas. Upon inquiry into the reasonableness of the proposed cancellation and of certain substitute rates suggested at the hearing, the commission holds that no evidence has been introduced tending to show that the proposed cancellation or the suggested substitute rates would be just or reasonable, and that respondent's apprehension of reductions in its intrastate rates constitutes no justification for canceling or increasing interstate rates when the propriety of the resulting increased rates is not established. (40 I. C. C., 94.)

#### Coal and Coke from Bon Air, Tenn.

*Opinion by Commissioner Clements:*

Over the protest of the Southern Railway but acting under its concurrence, the Nashville, Chattanooga & St. Louis reduced rates on bituminous coal from its Tennessee mines to Southern Railway stations in Georgia and changed the relationship between these mines and the Southern's Tennessee mines. The Southern withdrew its concurrence in such rates, necessitating their cancellation. The resulting combination rates are held by the commission not to have been justified, but the Southern is found to have justified increased rates in the amounts of those in effect prior to the reduction referred to. (40 I. C. C., 180.)

#### Express Rates from Sioux City, Iowa

*Traffic Bureau of the Sioux City Commercial Club v. American Express Company et al. Opinion by Commissioner Meyer:*

The commission finds that the express rates between Sioux City, Iowa, and points in South Dakota are not unreasonable.

The present relation of rates for transportation by express between Sioux City, Iowa, and points in South Dakota, and between the same South Dakota points and Sioux Falls, Mitchell, Aberdeen, Watertown and Yankton, S. D., is held, however, to give an undue preference to Sioux Falls, Mitchell, Aberdeen, Watertown and Yankton, and to result in prejudice and disadvantage to Sioux City. The defendants are ordered to remove this discrimination. (39 I. C. C., 703.)

### STATE COMMISSIONS

At the request of the Georgia Shippers' Association, the hearing on the proposed adjustment of freight rates by Georgia roads has been postponed by the State Railroad Commission to August 17, which is the day after the close of the legislative session. Attorneys for the railroads were ready but acceded to the request. The commission has announced a program of hearings for eleven divisions of tariffs. The date set for the final hearing is September 2. The statement, which has been widely published in connection with this investigation of proposed increases, that freight rates are already higher in Georgia than in other Southern States, has been answered by the railroads in a long letter, sent to the principal newspapers, showing the incompleteness and unfairness of the comparison on which the statement was based. It is declared that on the great bulk of the freight the rates in Georgia are in reality lower. The comparison, based on the numbered classes alone, covers a comparatively small volume of merchandise.

### COURT NEWS

#### Relief Associations

The Indiana Appellate Court holds that an action for benefits against a railroad employees' relief association cannot be maintained where the establishment of such relief association is void under the Indiana statute of 1907, prohibiting railroads from maintaining any relief association the rules of which require an employee to waive personal injury claims on becoming a member. —B. & O. S. W. v. Duncan (Ind.), 112 N. E., 898.

#### Limitation of Liability for Loss by Freezing

A shipper, not wishing to wait for a refrigerator car, accepted a box car in which to ship potatoes from Kaleva to Chicago, expressly assuming by indorsement on the shipping order the risk of freezing. From a directed verdict for the plaintiff in an action for damages, the potatoes being frozen, on the ground of unreasonable delay at Kaleva, the railroad appealed. It was not shown that the potatoes did not freeze before the delay at Kaleva had become unreasonable. The Michigan Supreme Court held that the plaintiff could not recover notwithstanding Michigan Uniform Bills of Lading Act, permitting the carrier to insert in the bill of lading only such conditions as do not impair his obligation to exercise the "degree of care in the transportation and safe-keeping of the goods intrusted to him which a reasonably careful man would exercise in regard to similar goods of his own." This could not be intended to require the carrier to take precautions with goods which the owner himself deemed it



unnecessary or undesirable to take. The owners were equally aware of the danger of freezing, anticipated it, yet relied upon chance by their failure to put a stove in the car.—*Lardie & Son v. Manistee & North Eastern (Mich.)*, 158 N. W., 31.

#### Proper Notice of Claim for Damages

In a suit for negligent delay in a shipment of live stock the defense was set up that no notice of claim for damages was given as required by the shipping contract. The Kansas City Court of Appeals held that a letter from the railroad's superintendent of freight loss and damage claims, which was on its face an admission that a claim was filed with the road concerning the shipment, but which did not show when it was received, the letter treating the matter as though notice had been given in proper time, was sufficient evidence that notice was given within the required time. This, the court said, was not treating the letter as showing any waiver of notice, but holding that the evidence showed notice was given and inferably, from the facts and conduct of the parties, within the required time.—*McFall v. St. Louis & San Francisco (Mo.)*, 185 S. W., 1,157.

#### Crossing Accident—Standing on Track

Where a person at a crossing stood on one track in broad daylight, waiting for a train to pass on another track, the Michigan Supreme Court holds that the engineer of an approaching freight train on the track on which the person stood had a right to assume that the latter would seasonably step aside, and until it became apparent that he would not do so there could be no negligence of the engineer "after discovery of the plaintiff's negligence," and the railroad was entitled to a directed verdict.—*Bonner v. Grand Trunk Western (Mich.)*, 158 N. W., 3.

#### Delivery of Goods

A bill of lading of hay to the order of the consignor was delivered by the bank to the buyer that he might exercise the right of inspection, which the shipping contract allowed him to do. The hay was promptly returned after inspection, and the buyer refused to receive it because it was not in good condition. The station agent by mistake marked the bill canceled by delivery. After a delay of more than a month, during which the consignor insisted on treating the transaction as a delivery, the hay was returned to and sold by him. He then sued the railroad and the bank for the difference between the price realized and the contract price. The Kansas City Court of Appeals held that the station agent's mistake did not entitle the plaintiff to treat the hay as delivered, so as to render the railroad liable for wrongful cancellation. The mistake was corrected immediately, and, of course, before any injury could have resulted. The damage was the result of the plaintiff's own fault.—*St. Joseph Hay & Feed Co. v. Missouri Pacific (Mo.)*, 185 S. W., 1162.

#### Routing Shipments—Different Rates Between Two Points

The Pittsburgh Coal Company and the Zenith Furnace Company delivered 14 carloads of coal to the Northern Pacific at Duluth, Minn., to be carried to Hitterdal, Minn., for delivery to the consignee, the plaintiff in an action to recover excess freight rates. The Northern Pacific owned and operated two lines out of Duluth, over either of which it could have carried the coal to Hitterdal. One line, 228.1 miles long, was wholly within Minnesota, and the legal rate for such shipments over that line, as fixed by the state statute of 1907, was \$1.28 per ton. The other line, 234.7 miles long, ran through Wisconsin for 11.7 miles, and the legal rate for such shipments over this line, as fixed by tariffs filed with the Interstate Commerce Commission, was \$2 per ton. The railroad, having received no instructions as to the line over which the coal should be shipped, transported it over the interstate line, and collected from plaintiff \$2 per ton. The railroad's only defense was that the shipment was subject to the interstate rate.

The Minnesota Supreme Court holds that where a railroad operates two lines between the same points and the freight rate over one line is less than over the other, if other conditions are reasonably equal, it is the duty of the company to transport shipments between those points over the line which will give the shipper the benefit of the cheaper rate; or to show that

shipper selected the other line, or that a proper regard for his interests required the shipment to be made over it. The rates prescribed by the state statute were held to be the lawful rates for transporting intrastate shipments from the time that act declared such rates to be in effect, notwithstanding the fact that the enforcement thereof had been enjoined for a time. The railroad was not relieved from its duty by the fact that the validity of the lower rate was in litigation, and until the judgment of the United States Supreme Court established its validity and annulled the injunction. The fact that owing to easier grades it was more economical to transport the shipments over the interstate line did not justify disregard of the plaintiff's right.—*Solum v. Northern Pacific (Minn.)*, 157 N. W., 906.

#### Sufficiency of Bridge Tell-Tales

In an action against a railroad for the death of a brakeman, killed by striking a low bridge while on top of a train, it was shown that there was a telltale within 247 feet of the bridge, and that the train was moving 25 miles an hour. The New York Appellate Division held that it was a question for the jury whether the telltale was too near the bridge. While the evidence showed that the brakeman had been employed by the railroad as a fireman and brakeman for a year, it also showed that he had made only from 7 to 10 trips on this branch of the road, and that the time of the accident was the first time he had ever been on the top of the train when it passed under the bridge. Did he know, or should he have known, the distance of the telltale from the bridge? It was held that this was a question for the jury.

Was the engineer of the train negligent in not signalling with the engine whistle as the train neared the bridge? There was no rule of the company requiring such signals. Was it imputable negligence on the part of the engineer not to give them of his own volition? The engineer testified that he sometimes whistled as the engine neared a low bridge if he thought the brakemen might be unaware. Perhaps he might not have occasion to do this twice in a year, and then only when he thought that he noticed that the brakeman was unconscious at the moment of the situation. It was held that it was error to submit to the jury any question of negligence on the part of the engineer. The court distinguished the case from *Curren v. Lake Champlain & M.*, 211 N. Y. 60, 105 N. E. 105, where the practice of signaling relied on was uniform. Judgment for the plaintiff was reversed and a new trial granted.—*Marus v. Central of New Jersey (N. Y.)*, 155 N. Y. Supp., 586.

#### The Right to Work Is Property

The Supreme Judicial Court of Massachusetts holds that the state statute of 1914, declaring that the right to work shall no longer be a property right and prohibiting injunction in violation of employment contract cases where no irreparable damage is about to be committed on property, was beyond the power of the legislature to enact, since it deprived the laborer of property without due process of law. The right to work is property of which one cannot be deprived by simple mandate of the legislature, but is protected by the 14th amendment to the Constitution of the United States, and by numerous guaranties of the state constitution. The mere fact that it is also a part of the liberty of the citizen does not affect its character as property. A further effect of the statute was to deprive laborers of the equal protection of the laws. It provides in substance that the property right to labor of any individual or number of individuals associated together shall not be recognized in equity as property when assailed by a labor combination, unless irreparable damage is about to be committed, and no relief by injunction shall be granted save in like cases where there is no relief at law.

"If a laborer must stand helpless in a court while others there receive protection respecting the same general subject which is denied to him, he is not being afforded his constitutional right of the equal protection of the laws. The right to make contracts to earn money by labor is at least as essential to the laborer as is any property right to other members of society. If as much protection is not given by the laws to this property, which often may be the owner's only substantial asset, as is given other kinds of property, the laborer stands on a plane inferior to that of other property owners. Absolute equality before the law is a fundamental principle of the Constitution. The courts must be open to all upon the same terms. Doubtless the legislature may

make many classifications in laws which regulate conduct and to some extent restrict freedom. So long as these have some rational connection with what may be thought to be the public health, safety, or morals, or in a restricted sense, so as not to include everything that might be enacted on grounds of mere expediency, they offend no constitutional provision. Weekly payment laws, employers' liability acts, workmen's compensation acts, inspection laws based on number of employees, and numerous statutes similar in principle have been upheld. But these are all quite different from that in question."

The action in which the question arose was one in which a labor union was alleged to be conspiring to deprive the complainants of their employment if they did not desert their own and join the defendant organization, by using unlawful pressure on employers by threats of sympathetic strikes and otherwise.—*Bogni v. Perotti* (Mass.), 112 N. E., 853.

#### Crossing Accident—Contributory Negligence

Action was brought by a chauffeur for personal injuries sustained in attempting to cross the Lehigh Valley tracks near Valois, N. Y. The automobile was struck by a train and two of its occupants were killed. In the Federal District Court the plaintiff secured a judgment, from which the railroad appealed. It did not dispute the negligence of the engineer in failing to give warning by bell or whistle, or the amount of the verdict, and the only question in the case was whether the plaintiff exercised the care which the law required of him. "What the plaintiff did or did not do before he got upon the track," the Circuit Court of Appeals for the Second Circuit said, in affirming the lower court's judgment, "is of the greatest importance. . . . The plaintiff knew for a distance of half a mile south of the crossing that he was approaching it. When he was about 825 feet from it he shut off the power and let his automobile coast to a point 146 ft. short of the crossing, where he brought his car to a stop. He then looked both ways along the tracks, and, seeing no sign of a train, started towards the crossing, and continued to look as well as he could, both ways, until he got on the crossing and saw the engine approaching him from about 200 feet away. He heard no sound of the engine before he saw it. At that time his seat in the automobile was right over the first track. He then put on power, all he dared to, in an effort to get across ahead of the train, because, he said, he knew he couldn't stop to clear it. The locomotive hit the rear end of the automobile and threw it from the track, smashing it pretty well to pieces." The plaintiff testified that before he stopped to look and listen an orchard and cattle guards obstructed his view. It was held that whether the plaintiff told the truth and whether he exercised sufficient care were questions for the jury. Mr. Ward, Circuit Judge, dissented, on the ground that the plaintiff was guilty of contributory negligence as a matter of law, saying: "He employed an engineer to take measurements on the ground, who testified that at a point 146 ft. south of the track on which the train was approaching there is an unobstructed view of the curve, that is, about 3,498 ft. from the crossing, and at a point 100 ft. south an unobstructed view for 3,380 ft. Such obstructions as were spoken of, as for instance, fences, cattle guards, telegraph poles, interfered no more with the plaintiff's vision than would a balloon or a bird flying in the air. Giving the train 60 miles and the car 8 miles an hour, which are the highest speeds testified to, the train would move 88 ft. and the car nearly 12 ft. a second; in other words, at a point 146 ft. south of the place of collision, one could see the train approaching about 1,520 ft. away, and one who started from that point, as the plaintiff says he did, would at 8 miles an hour arrive at it in 15 seconds, with the train in full view all the time. The plaintiff testified he stopped at the 146-ft. point, looked and did not see the train, and then started up and looked and did not see it until the train was within 200 ft. This testimony cannot be believed. If he had looked he must have seen it in time to avoid the collision, because he said he could stop his car in 6 ft."—*Lehigh Valley v. Kilmer*, C. C. A., 231 Fed., 628.

In an action arising out of the same facts by the executor of a female passenger who was killed while riding in the back seat of the automobile, it was held that the decision in the Kilmer case ruled this, and the question whether the deceased was guilty of contributory negligence in not doing something to stop the chauffeur from driving in front of the train was a question for the jury.—*Lehigh Valley v. Emens*, C. C. A., 231 Fed., 636.

## Railway Officers

### Executive, Financial, Legal and Accounting

George R. Allen has been appointed assistant general solicitor of the Pennsylvania Railroad, with office at Philadelphia, Pa., succeeding Henry W. Bikle, promoted. Effective August 1.

Henry Wolf Bikle, whose appointment as assistant general counsel of the Pennsylvania Railroad, with office at Philadelphia, Pa., has already been announced in these columns, was born on October 20, 1877, at Gettysburg, Pa. He prepared for college at Steven's Hall, in Gettysburg, and later took a course at Pennsylvania College, graduating in 1897 with degree of A.B. Mr. Bikle studied law at Gettysburg until the fall of 1898, and then entered the law department of the University of Pennsylvania, graduating from this institution in 1901. In June of the same year he was admitted to the bar, and since 1904 he has been first a lecturer and later assistant professor in the law department of the University of Pennsylvania. He was appointed assistant general solicitor of the Pennsylvania Railroad on December 1, 1907, which position he held at the time of his recent appointment as assistant general counsel of the same road as above noted.



H. W. Bikle

A. W. Thompson, whose appointment as vice-president in charge of traffic and commercial development of the Baltimore & Ohio system, with headquarters at Baltimore, Md., has already been announced in these columns, was born on May 8, 1875, at Erie, Pa., and was graduated from Allegheny College, Meadville, in 1897, as a civil engineer. The following year he began railway work in the engineering department of the Pittsburgh & Lake Erie, and in 1899 was appointed assistant engineer of surveys on the Pittsburgh division of the Baltimore & Ohio. He was made assistant engineer of the Pittsburgh division in 1900, and the following year was appointed engineer of the Cumberland division. In 1902 he returned to Pittsburgh as division engineer, and the following year went back to the Cumberland division as superintendent. He was transferred to Wheeling, W. Va., in 1904, as superintendent of the Wheeling division, and from 1907 to April, 1910, he was chief engineer of maintenance of way. In April, 1910, he was promoted to chief engineer of the Baltimore & Ohio system, including the Baltimore & Ohio Southwestern, and remained in this position until December, 1910, when he was made general manager of the same roads at Baltimore, Md. On April 11, 1912, he was elected third vice-president of the same roads and



A. W. Thompson



the Cincinnati, Hamilton & Dayton, with office at Baltimore, and now becomes vice-president in charge of traffic and commercial development of the Baltimore & Ohio system, as above noted.

C. S. Sikes, auditor for the receivers for the Pere Marquette, has been appointed general auditor for the receivers, the position of auditor having been abolished. J. O. Talbott, assistant auditor, has been appointed assistant general auditor; A. J. Anderson, auditor of traffic accounts, has been appointed auditor of freight traffic, and F. W. Niemann has been appointed auditor of passenger traffic. The positions of assistant auditor, auditor of traffic accounts and assistant auditor of traffic accounts have been abolished, effective July 1.

#### Operating

The headquarters of the dining car and hotel department of the Union Pacific system have been transferred from Omaha, Neb., to Ogden, Utah.

R. E. Orr, acting trainmaster of the Grand Trunk at Lindsay, Ont., has been appointed trainmaster of the eighth, ninth and tenth districts, with headquarters at Lindsay.

J. H. Carlisle, assistant to general superintendent of transportation of the Chesapeake & Ohio and the Chesapeake & Ohio of Indiana, at Richmond, Va., has been appointed assistant to the general manager, with headquarters at Richmond.

T. B. Burgess, trainmaster of the Baltimore & Ohio at Garrett, Ind., has been appointed assistant superintendent with office at Cleveland, Ohio. Lyman H. Campbell has been promoted from a position in the operating department at Baltimore, Md., to trainmaster of the Chicago division, with office at Garrett, succeeding Mr. Burgess.

Carl A. Mitchell, trainmaster of the New York, New Haven & Hartford at Hartford, Conn., has been appointed superintendent of the Hartford division, succeeding A. W. Honywill, assigned to other duties, and Charles H. Motsett has been appointed superintendent of the New London division, with headquarters at New London, vice P. T. Litchfield, assigned to other duties.

J. G. Bloom, division engineer of the Chicago, Rock Island & Pacific, at Little Rock, Ark., has been appointed superintendent of the Amarillo division, with headquarters at Amarillo, Tex., vice H. J. Sewell, transferred to the Louisiana division with office at Eldorado, Ark. D. Van Hecke, superintendent of the Louisiana division, has been transferred to the Indian Territory division with headquarters at Haileyville, Okla., vice H. F. Reddig, transferred to the Oklahoma division, with headquarters at El Reno, Okla. C. L. Ruppert, superintendent of the Oklahoma division, has been transferred to the Missouri division, with headquarters at Trenton, Mo., vice F. W. Rosser, resigned.

James Paul Stevens, whose appointment as general manager of the Chesapeake & Ohio and Chesapeake & Ohio of Indiana, with headquarters at Richmond, Va., has already been announced, was born on December 28, 1885, at Peru, Ind., and was educated in the common schools. He began railway work in January, 1901, on the Chesapeake & Ohio and served to 1904 consecutively as clerk, telegraph operator and despatcher, at Hinton, W. Va., and at Richmond, Va. In January, 1904, he was appointed chief despatcher on the Cincinnati division at Covington, Ky., remaining in that position until February, 1907, when he was promoted to assistant superintendent of the same division. In January of the following year he was appointed superintendent of the same division. On May 1, 1910, he was appointed general superintendent, and since that time has served in this capacity on all three general divisions of the same road until his appointment on July 1, as general manager of the Chesapeake & Ohio and the Chesapeake & Ohio of Indiana, as above noted.

B. B. Greer, whose appointment as assistant to the vice-president in charge of operation of the Chicago, Burlington & Quincy has been announced, was born in Chicago in 1877. He was educated at Armour Institute and Dartmouth College and began railway work in 1899 with the Great Northern. He remained with that company until 1908, filling various positions, including roadmaster's clerk, chief clerk to the superintendent, roadmaster and assistant superintendent. Mr. Greer then entered the service

of the Burlington as transportation inspector on the general manager's staff, and has since been consecutively superintendent of terminals at St. Louis, Mo., division superintendent at Hannibal, Mo., and St. Joseph, and assistant to the general manager of the lines east of the Missouri river, with headquarters at Chicago. On January 1, 1915, he was promoted to assistant general manager of the lines east, with office at Chicago, and on March 1, of the same year, was transferred to Omaha, Neb., as assistant general manager of the lines west. As assistant to the vice-president he has headquarters at Chicago.

Thomas B. Coppage, whose appointment as general superintendent of the first district of the St. Louis & San Francisco has been announced, was born on June 23, 1864, at Danville, Ky. He entered railway service in 1879, as an employee of the Louisville & Nashville, and from 1880 to 1890 was successively operator, despatcher and trainmaster of the Cincinnati Southern and its successor, the Cincinnati, New Orleans & Texas Pacific. From 1890 to 1892 he was assistant superintendent of the Louisville, New Orleans & Texas, at Greenville, Miss. He was despatcher and chief despatcher of the Atchison, Topeka & Santa Fe, at Marceline, Mo., until 1894, when he entered the employ of the St. Louis, Iron Mountain & Southern, at Van Buren, Ark., as chief despatcher. He was later trainmaster of the same road at Van Buren, and, in 1902, became trainmaster of the Gulf, Colorado & Santa Fe at Temple, Tex. He was later division superintendent, with office at Temple, Tex., and, in 1907, entered the service of the St. Louis & San Francisco as superintendent of the Northern division at Ft. Scott, Kan. On March 1, 1914, he was appointed superintendent of transportation, with headquarters at Springfield, Mo., and on July 1, 1916, was promoted to general superintendent of the first district, with headquarters at the same city.

J. H. Dyer, whose appointment as assistant general manager of the northern district of the Southern Pacific, with headquarters at Portland, Ore., has already been announced in

these columns, was born in Colfax, Cal., in 1872. He began work with the Southern Pacific as a track laborer in 1888, on the Sacramento division. In the following year he entered train service as a brakeman, and subsequently was a conductor, yardmaster and trainmaster on the same division. He was appointed superintendent of the Shasta division in 1908, and superintendent of the Tucson division in 1911. He was transferred to the Sacramento division as superintendent in 1914, and continued in that position until July 1, 1916,



J. H. Dyer

when his appointment as assistant general manager was effective.

#### Traffic

J. W. Ellingson has been appointed traffic manager of the Salt Lake & Ogden, with headquarters at Ogden, Utah.

Willard G. Wilson has been appointed commercial agent of the Southern Pacific, with headquarters at Ogden, Utah, vice M. D. Shortz, resigned.

W. H. Gardner has been appointed assistant general livestock agent of the Gulf, Colorado & Santa Fe, with headquarters at Ft. Worth, Tex., vice K. D. McKenzie, resigned.

T. H. Simmons, commercial agent of the Chicago, Rock Island & Pacific at Cedar Rapids, Iowa, having retired, W. B. Metcalf has been appointed commercial agent, with headquarters at Cedar Rapids.

J. R. Morrow, traveling passenger agent of the New Orleans & Northeastern, the Alabama & Vicksburg, and the Vicksburg,

Shreveport & Pacific at Dallas, Tex., has been appointed western passenger agent, with headquarters at Dallas, vice C. F. Woods, promoted.

G. S. Rains, whose appointment as freight traffic manager of the Seaboard Air Line, with office at Norfolk, Va., has already been announced in these columns, was born on February 16, 1879, at Gainesville, Fla., and was educated at the grammar schools. He entered railway service on December 1, 1893, as office boy in the general freight office of the Florida Central & Peninsular at Jacksonville, Fla. When that company became part of the Seaboard Air Line in July, 1900, he was transferred to the general freight office of the Seaboard Line, at Portsmouth, Va., and was consecutively chief rate clerk, assistant chief clerk and chief clerk of rate department. In July, 1909, he was appointed assistant general freight agent of the Seaboard Air Line at Norfolk; in November, 1912, he was promoted to general freight agent and now becomes freight traffic manager of the same road, as above noted.

Eugene Fox, recently appointed general traffic manager of the El Paso & Southwestern System, the Morenci Southern and the Nacozari, with headquarters at El Paso, Tex., was born at Winterset, Iowa, on January 18, 1877, and was educated in the public schools of Stuart, Iowa, and Hutchinson, Kan. He began railway work as a bill clerk for the Chicago, Rock Island & Pacific at Hutchinson, in January, 1898. He was subsequently weighmaster, ticket clerk, bill clerk and cashier in the freight department until September, 1899, when he was appointed traveling freight agent, with headquarters at Salt Lake City, Utah. In October, 1901, he was transferred to St. Louis, Mo., in the same capacity, and in 1902 was made traveling freight agent, with headquarters at El Paso, Tex. In June, 1905, he left the Rock Island to become general agent of the El Paso & Southwestern system at Los Angeles, Cal. He was transferred to Chicago, Ill., as general agent, in November, 1906, and in June, 1909, was made assistant general freight agent at El Paso. From 1910 to 1913 he was general freight and passenger agent at El Paso, and from the latter date until July 1, 1916, was assistant general traffic manager at Chicago. As general traffic manager Mr. Fox will have his headquarters at El Paso, Tex.



Eugene Fox

#### Engineering and Rolling Stock

The office of the mechanical superintendent of the Texas & Pacific has been transferred from Marshall, Tex., to Dallas. The jurisdiction of the mechanical superintendent has been extended over the fuel bureau.

D. C. Cunningham, superintendent of shops of the Denver & Rio Grande at Salt Lake City, Utah, has been appointed superintendent of motive power of the Denver & Salt Lake, with headquarters at Denver, Colo.

Robert Farnham, Jr., assistant to the engineer of bridges and buildings of the Pennsylvania Railroad at Philadelphia, Pa., has been appointed assistant engineer of bridges and buildings, and the position of assistant to the engineer of bridges and buildings has been abolished.

C. B. Woticky has been appointed electrical engineer of the Lehigh Valley, and D. J. Cartwright, electrical engineer at South Bethlehem, Pa., has been appointed assistant electrical engineer, both with offices at South Bethlehem.

C. F. Hinchman, assistant engineer maintenance of way of the Cleveland, Cincinnati, Chicago & St. Louis, at Mount Carmel, Ill., has been appointed engineer maintenance of way of

the Indianapolis terminal division, with headquarters at Indianapolis, Ind.

Arthur Engh, whose appointment as assistant bridge engineer, Chicago, Burlington & Quincy, lines east of the Missouri river, has been announced, was born at Chicago, Ill., on June 9, 1885. Prior to entering railway service he was employed by Ralph Modjeski and the American Bridge Company. From August, 1905, to 1913, he did detailing and designing work in the bridge department of the Burlington. He was then made office engineer in charge of the office of the bridge engineer, being relieved of these duties in 1914, to become office engineer of the Paducah & Illinois, in charge of the design of the Metropolis (Ill.) bridge. In 1915 and 1916, he was again office engineer of the Burlington in charge of the design and plans for the double-track bridge across the Missouri river at Kansas City. As assistant bridge engineer he will have headquarters, as heretofore, at Chicago, Ill.

Arthur E. Owen, whose appointment as chief engineer of the Central of New Jersey, with headquarters at New York, has already been announced in these columns, was born on January 19, 1876, at Montclair, N. J., and was educated in the Montclair high school and later attended Rutgers College, New Brunswick, N. J. In 1898 he began railway work as a draftsman in the tax agent's office of the Central of New Jersey at New York and has been in the continuous service of that road ever since. In August, 1899, he was transferred to the chief engineer's office as a rodman, and the following November was appointed assistant engineer, at Mauch Chunk, Pa. He was transferred in the same capacity to Jersey City in 1901, remaining in that position until January, 1907, when he was appointed principal assistant engineer; and he now becomes chief engineer of the same road as above noted.



A. E. Owen

#### Purchasing

William G. O'Fallon has been appointed purchasing agent of the Terminal Railroad Association of St. Louis, vice J. E. Williams, Jr., assigned to other duties.

G. T. Ingold has been appointed storekeeper of the Baltimore & Ohio lines at New Castle Junction, Pa. He was formerly connected with the storekeeper's department at Pittsburgh.

#### OBITUARY

Robert B. Thomson, treasurer of the Chicago Junction and the Union Stock Yards & Transit Company, died at his home in Morgan Park, Ill., on July 9.

A. J. Cota, division master mechanic of the Chicago, Burlington & Quincy, lines east of the Missouri river, with office at Chicago, died at his home in La Grange, Ill., on July 9.

J. L. Brass, assistant to the general manager of the Oregon-Washington Railroad & Navigation Company, with headquarters at Seattle, Wash., died at that city on June 30, after an illness of several weeks.

John Norment Powell, general counsel of the Carolina, Clinchfield & Ohio, at Johnson City, Tenn., died on July 8, at Wytheville, Va. Mr. Powell was born on September 15, 1877, at Columbia, Va. He studied law privately and was admitted to the bar in 1899. In September, 1901, he was appointed general counsel of the South & Western Railroad, and since 1908 had been general counsel of the Carolina, Clinchfield & Ohio, which absorbed the South & Western.



## Equipment and Supplies

### LOCOMOTIVES

THE RHODESIA RAILWAYS, LTD., have ordered 6 Mountain type locomotives from the American Locomotive Company. These locomotives will have 23 by 24-in. cylinders, and a total weight of 172,000 lb.

THE UNION MINERE DE HAUT KATANGA has ordered 5 six-wheel switching locomotives from the American Locomotive Company. These locomotives will have 10 by 16-in. cylinders, and a total weight of 45,000 lb.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1438 S. Penn Square, Philadelphia, Pa., is in the market for one 50-ton Heisler locomotive, one 30-ton Climax geared locomotive, and one 42-ton Shay geared locomotive.

THE CENTRAL OF BRAZIL, reported in the *Railway Age Gazette* of June 30 as being in the market for 7 Pacific and 12 ten-wheel locomotives, has ordered 2 Pacific and 12 ten-wheel locomotives from the American Locomotive Company. The Pacific type locomotives will have 21½ by 28-in. cylinders, and a total weight of 207,000 lb. The ten-wheel locomotives will have 21½ by 28-in. cylinders, and a total weight of 175,000 lb.

### FREIGHT CARS

THE LEHIGH VALLEY is inquiring for 1,500 box car bodies.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for one steel four-wheel coal car.

THE CHICAGO & NORTH WESTERN is inquiring for 200 narrow gage mine cars.

THE CHICAGO, MILWAUKEE & ST. PAUL will soon build 1,100 42-ft., 40-ton box cars at its Milwaukee shops.

THE DULUTH, WINNIPEG & PACIFIC has ordered 750 box cars from the Haskell & Barker Car Company.

THE HAVANA CENTRAL has ordered 50 30-ton flat, 150 30-ton box and 10 30-ton caboose cars from the Standard Steel Car Company. These cars are for the Cuban Central. The Havana Central was also reported in the *Railway Age Gazette* of June 30 as having placed orders for 940 other freight cars.

THE PENNSYLVANIA EQUIPMENT COMPANY, Philadelphia, Pa., is in the market for 15 to 20 second-hand standard gage tank cars, with wood or steel underframes, and with a capacity of 5,000 to 7,000 gallons of molasses, weighing 12 lb. to the gallon. The Pennsylvania Equipment Company is also in the market for 15 to 20 second-hand, 100,000 lb. capacity steel hopper cars, 25 to 30 No. 2 Russell log cars and several log loaders.

### PASSENGER CARS

THE PHILADELPHIA & READING is in the market for 2 to 6 dining cars.

THE DELAWARE & HUDSON has ordered one private car from the Pullman Company.

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA is inquiring for 2 lounging and cafe cars.

THE BOSTON ELEVATED has ordered 42 all steel elevated car bodies from the Pressed Steel Car Company.

### IRON AND STEEL

THE RUSSIAN GOVERNMENT has placed orders with American companies for approximately 425,000 tons of rails, divided about as follows: United States Steel Corporation, 150,000 tons; Cambria Steel Company, 150,000 tons; Lackawanna Steel Company, 75,000 tons, and Bethlehem Steel Company, 50,000 tons. In 1915 the Russian Government ordered 400,000 tons of rails in the United States.

## Supply Trade News

D. E. Garrison, president of the Corrugated Bar Company, of St. Louis and Buffalo, died on July 4 at his home in St. Louis, Mo., at the age of 77.

R. L. Brown, who has been associated with the M. C. B. Company, Chicago, has been appointed special representative of the Curtain Supply Company, Chicago.

Atkinson & Utech, Inc., 111 Broadway, New York, have been appointed Eastern sales agents for J. R. Johnson & Co., Richmond, Va., manufacturers of open hearth steel car axles.

Henry Fischer, sales agent at Chicago for the Verona Tool Works, of Pittsburgh, Pa., has been appointed general sales

manager of the company, with headquarters at Pittsburgh, Pa. Mr. Fischer was born on June 4, 1880, in Brooklyn, N. Y. He was employed by the Shutt Improvement Company, railroad contractors, at St. Louis, Mo., from 1901 to 1903. From 1904 to 1911 he was in the engineering department of the Cleveland, Cincinnati, Chicago & St. Louis, at Cincinnati, Ohio, during the last three years of which time he was chief clerk to the chief engineer. From 1911 until July 1, 1916, he was sales agent of the Verona Tool Works at Chicago, as above noted.



H. Fischer

George R. Boyce, railroad representative of A. M. Castle & Co., Chicago, Ill., has been appointed assistant general manager of sales and in that capacity will retain supervision of the railroad sales for the company.

Aaron Dean, formerly resident manager of the New York office of the Union Switch & Signal Company, has been appointed special representative, with headquarters in New York. W. P. Allen has been appointed resident manager.

The Franklin Railway Supply Company has granted leave of absence to its employees already active in the National Guard or those who may join later. Married or single men with dependents will receive full pay and their positions will be reserved for their return.

Harry S. Whitehair, formerly with the railway department of the Chicago Varnish Company in the New York office, has been appointed Eastern representative of the Kay & Ess Company, Dayton, Ohio. Mr. Whitehair was with McCord & Company, Chicago, for two years before his connection with the Chicago Varnish Company.

J. M. Buick, vice-president of the American Car & Foundry Company, has been appointed general manager also. William M. Hager, formerly secretary of the company, has been elected assistant to the president, and has been succeeded as secretary by H. C. Wick, formerly assistant to the secretary and also secretary to F. H. Eaton, the late president of the company. F. W. Tuttle has been appointed assistant secretary.

At the recent commencement exercises of the Rensselaer Polytechnic Institute, the degree of Doctor of Engineering was conferred upon Robert W. Hunt, who has been a trustee of the institute since 1886, and has done much to further the interests of the school. At the same time a portrait of Mr. Hunt by

Lewis Betts was presented to the institute. Mr. Hunt has contributed largely to the erection of some of the institute's new dormitories.

A. E. Crockett, vice-president of the Standard Chain Company, Pittsburgh, Pa., has been appointed assistant general sales manager of the chain department of the Jones & Laughlin Steel Company. F. D. Grunder, assistant general sales manager of the National Tube Company, has been appointed assistant general manager of sales of the new tube department of the Jones & Laughlin Steel Company, with headquarters at Pittsburgh. S. E. Hackett, assistant to the president of Joseph T. Ryerson & Sons, has been made manager of the Chicago branch of the Jones & Laughlin Steel Company, vice David N. Barker, resigned.

The net earnings of the American Car & Foundry Company for the fiscal year ended April 30, were \$2,816,017.55, after deducting \$1,779,341.07 for renewals, replacements, repairs, etc. Dividends of \$2,700,000 were paid at the rate of 7 per cent on preferred capital stock and 2 per cent on common stock, leaving \$116,017.55 surplus earnings for the year. In his remarks, President Woodin stated that about \$7,300,000 worth of munitions contracts had been undertaken by the company, and added that the company's export department had obtained a fair share of the foreign orders for equipment, which assumed considerable proportions during the past year. Additions to the Chicago (Ill.) and Berwick (Pa.) plants and the improvement of the facilities in the Milton plant for the more economical production of tank cars, called for an expenditure of \$474,774.55.

#### Bethlehem Steel Company

Official announcement has been made of the acquisition of the Pennsylvania and Maryland steel companies by the Bethlehem Steel Company, and also of the future policy of the companies. The announcement states:

"All of the properties and businesses as going concerns of the Pennsylvania Steel Company and Maryland Steel Company have been acquired by Penn-Mary Steel Company, a subsidiary of Bethlehem Steel Company, and such properties and businesses will hereafter be operated under lease by Bethlehem Steel Company, which has taken over all contracts, has acquired all current accounts, and is prepared to meet all outstanding obligations of such companies when due.

"All unfinished contracts of these companies will be carried out and performed by the Bethlehem Steel Company without interruption. The books of account will be kept at, and all payments will be made from, South Bethlehem, Pa., and checks for accounts due to the Pennsylvania Steel Company or Maryland Steel Company should be drawn to the order of Bethlehem Steel Company, and mailed to South Bethlehem, Pa. The executive, treasury, accounting, sales and purchasing departments will have their headquarters at South Bethlehem, Pa., to which letters intended for their attention should be addressed.

"Bethlehem Steel Company, by E. G. Grace, president.

"Pennsylvania Steel Company, by E. C. Felton, president."

L. W. Adams has been appointed superintendent of the Saucon plant, vice R. F. Randolph, general superintendent, resigned. R. M. Bird has been appointed superintendent of the rolling mills of the Lehigh plant, succeeding Mr. Adams, and William Bangster will succeed Mr. Bird as superintendent of the treatment department of the Lehigh plant.

The following changes have been made in the sales department: The general sales offices of the Pennsylvania Steel Company, the Maryland Steel Company and the Titusville Forge Company have been consolidated with the general sales office of the Bethlehem Steel Company. R. W. Gillispie, general manager of sales for the Pennsylvania and Maryland Steel Companies at Philadelphia, and Paul Mackall, sales agent for the Bethlehem Steel Company in the district of Pittsburgh and west, have been appointed assistant general sales agents at So. Bethlehem, Pa. Edward S. Knisely is general sales agent. R. E. Belknap, district sales manager Pennsylvania Steel at New York, will become sales agent at Chicago, and J. M. Price, sales agent of the Chicago district, has been transferred to St. Louis as sales agent.

The sales agents of the various branch offices will be as follows: H. A. Jackson, Oliver building, Boston; J. M. Ellis, 111

Broadway, New York; W. B. Kennedy, Morris building, Philadelphia; Jesse A. Davis, Continental building, Baltimore; H. W. Eisenhart, First National Bank building, Pittsburgh; J. N. Clarke, 1266 Ontario street, Cleveland; J. S. Hegeman, Majestic building, Detroit; R. E. Belknap, People's Gas building, Chicago; J. M. Price, Chemical building, St. Louis; E. S. Illig, Crocker building, San Francisco.

Charles M. Schwab, chairman of the company, has announced that improvements will be made in the Steelton, Pa., plant costing \$15,000,000. It is understood that expenditures totaling \$20,000,000 will be made on the Sparrows Point, Md., plant, and that \$1,000,000 will be spent for the Saucon plant.

#### Kansas City Bolt & Nut Company

In the *Railway Age Gazette* of June 23 announcement was made that on June 15 the stock of the Kansas City Bolt & Nut Company was purchased by Kansas City interests from the J. H. Sternbergh estate of Reading, Pa., and that coincident with the transfer of the property the following officers were elected: George T. Cook, president; Solomon Stoddard, vice-president and general manager; H. R. Warren, secretary and treasurer.

George T. Cook, the new president of the company, was born in Kansas City, Mo., October 14, 1871. He was educated in the public schools of Kansas City and graduated from the University of Kansas. He was in the purchasing department of the Kansas City, Fort Scott & Memphis for several years, and moved to St. Louis at the time the Kansas City, Fort Scott & Memphis was absorbed by the St. Louis & San Francisco. He remained in St. Louis about a year and left to go with the Kansas City Bolt & Nut Company as general sales manager in June, 1902. He resigned from the Kansas City Bolt & Nut Company in 1910, however, but continued in the railway supply business in Kansas City. On June 15, 1916, he was elected president of the Kansas City Bolt & Nut Company, as above noted.

Solomon Stoddard, vice-president and general manager, was born in Boston, Mass., and educated in Trinity College, Stratford, Conn.

He entered the service of the Kansas City Bolt & Nut Company in a minor position in February, 1900, and has worked up to the position of vice-president and general manager.

#### Steel Corporation's Unfilled Orders Decrease

The United States Steel Corporation reported 9,640,450 tons of unfilled orders on hand June 30. This is a decrease of 297,340 tons, as compared with the orders on hand at the beginning of the month, when the record total of 9,937,798 tons had accumulated. The June 30 figures are also below those of April 30, when orders amounted to 9,829,551 tons. They are, however,



G. T. Cook



S. Stoddard



more than double the 4,678,196 tons on the books June 30, 1915. The decrease in tonnage is the first reported since August, 1915.

### TRADE PUBLICATIONS

**FOUNDRY EQUIPMENT.**—The Whiting Foundry Equipment Company, Harvey, Ill., has recently issued catalog No. 120, dealing with tumblers and dust arresters; catalog No. 121, dealing with coke oven equipment, including ovens, racks, cars, trucks and coke-over doors, and catalog No. 122, dealing with ladles. All three bulletins are well illustrated.

**THE LOGIC OF THE DEAN.**—This is the title of a booklet which has recently been issued by the William B. Pierce Company, Buffalo, N. Y. The booklet deals with the Dean boiler tube cleaner made by the company. It shows how scale is formed and asserts that the formation of scale cannot be prevented absolutely by boiler compounds. It then takes up the problem of scale removal and describes the Dean tube cleaner and its operation. A list of users is also given.

**VARNISHES, ENAMELS AND JAPANS.**—The Moller & Schumann Company, Brooklyn, N. Y., has recently issued Bulletin No. 1, dealing with the company's Hilo black enamels and japans. The bulletin describes the range of blacks available for wood, steel, cast iron, tin, brass or other materials. It contains lustre standards whereby one may readily obtain a clear idea of the meaning of the terms, gloss, semi-gloss, rubber, dull rubber or flat, and be enabled to pick out the finish best suited to his needs. Each article is described in a manner to indicate its use. The bulletin also gives the necessary reduction for applying; the various methods of brushing, spraying, dipping and tumbling, and it also indicates the heat and time of baking.

**SOUTHERN PACIFIC.**—"Across America" is a new folder published by the Southern Pacific for distribution in Australasia and the Orient. Besides two maps, it contains over 60 half-tone illustrations of the attractions of California and the Pacific Coast in addition to characteristic views of Chicago, New York, Washington and other Eastern cities. The text describes, in an interesting manner, the four routes across America of which the tourist arriving in San Francisco has the choice when traveling over the Southern Pacific. Most valuable to over-sea travelers is the "Landing and Customs" information, which states clearly the requirements of the law as to declaration and entry of personal baggage, besides the rates of duty on some of the principal classes of merchandise usually brought in by passengers in their baggage.

**CAR WHEELS.**—The American Steel Foundries have issued an attractive catalogue descriptive of the Davis steel wheels made by the company. The booklet names the advantages of the Davis one-wear steel wheel asserting that, "It retains the advantages of the cast iron wheel—a hardened tread and flange, a softer plate and hub, and a one-wear construction" and in addition is stronger, is of less weight, has absolute rotundity because of its ground treads and has a lower maintenance cost on account of fewer removals for common wheel defects. The booklet is well illustrated, there being given sections, pictures of the wheels, and a number of views, some in colors, showing the manufacture. One section deals with wheels for electric railway service and another gives comparative data of Davis and other wheels in tests and actual service.

**STANDARD SAFETY DEVICES.**—The "Conference Board on Safety and Sanitation," 928 Western Avenue, West Lynn, Mass., has issued an eight-page leaflet describing the "N. A. S. O." safety devices, with illustrations and prices. These devices have been approved by the Conference Board, which represents the National Affiliated Safety Organizations, namely, the National Founders' Association, the National Association of Manufacturers, and the National Metal Trades Association; and all of the articles are made under the supervision of the board. The aim is to sell these articles at cost, or nearly so; but any profits derived from sales are utilized for further research in connection with the promotion of safety in industrial establishments. Among the things described are goggles; leggins for foundrymen; respirators; the N. A. S. O. Sanitary Stretcher; Safety Feet for Ladders, and a Metal Danger Sign. The N. A. S. O. Standard First Aid Jar was described in the *Railway Age Gazette* of January 8, 1915, page 64.

## Railway Construction

**ALABAMA & MISSISSIPPI.**—Work has been completed, it is said, on the extension of the Pascagoula-Moss Point Northern from a point near Leakesville, Miss., south to Lucedale, 20 miles, and a train was recently run from the northern terminus at Vinegar Bend, Ala., south to Pascagoula, Miss., on the Gulf Coast. (May 12, p. 1059.)

**ANTHONY & NORTHERN.**—This road has been extended from Fellsburg, Kan., north to Gibson, 13 miles.

**CANADIAN NORTHERN.**—A new branch has been opened for business from Camrose, Alta., south to Alliance, 59.8 miles. The Victoria Beach subdivision of the Central division has been extended from Grand Marais, Man., north to Victoria Beach, about 13.8 miles.

**CANADIAN PACIFIC.**—This company will extend its Expanse south line, seven miles beyond Vantage, Sask., and connect it with the line west of Weyburn, at Assiniboia. It will also extend the branch running from Stirling, Alta., to Foremost, ten miles east. Grading contracts have not yet been let. Track laying and all other work will be completed by the company's own forces.

**CENTRAL FLORIDA INTERURBAN.**—This company with \$100,000 capital and headquarters at St. Cloud, Fla., plans to build an inter-urban railway, it is said, from St. Cloud north to Sanford, about 40 miles, thence to a point on the Atlantic seacoast. C. E. Carlson, president, W. Hall, secretary and treasurer.

**CROSBYTON-SOUTH PLAINS.**—This company, a subsidiary of the Atchison, Topeka & Santa Fe, has asked for a charter for a line from Lubbock, Tex., 65 miles southwest, through Brownfield to Seminole. Locating will be started soon.

**DENTON-KRUM LINE.**—The city of Dallas, Tex., is making an effort to interest some company in the construction of a steam railroad between Denton and Krum, a distance of eight miles. This road would connect the Gulf, Colorado & Santa Fe at Krum, with the Missouri, Kansas & Texas at Denton. The city of Dallas agrees to take \$50,000 worth of first mortgage bonds on this road, should it be built.

**ELECTRIC STANDARD RAILWAYS COMPANY.**—A charter has been granted by the state of Delaware to this company with \$1,000,000 capital, it is said, to build and operate railways. G. L. Campbell, H. R. Noll and H. W. Lukens, Williamsport, Pa., are said to be interested.

**GREAT NORTHERN.**—This company has given a contract to Morris, Shepard & Dougherty, St. Paul, Minn., for building an extension from Wildrose, N. D., to Grenora, 36 miles at an estimated cost of \$675,000. About 5 per cent of the work has been completed.

**MARTINEZ & CONCORD INTERURBAN.**—This company will build a line from Martinez, Cal., via Avon to connect with the Oakland, Antioch & Eastern at Government Ranch, a distance of 6.5 miles. A contract for the grading will be let in about 60 days. About 15,000 cu. yd. of material per mile will be handled. The maximum curvature is about 4 deg. and the maximum grade about 2 per cent. About 900 lineal ft. of open deck pile trestle will be constructed. Clifford McClellan, president, and J. B. Rogers, chief engineer, San Francisco, Cal.

**MCCONNELLSBURG & FORT LOUDON.**—A contract for the construction and equipment of the line building from McConnellsburg, Pa., to Fort Loudon, 11 miles, has been let to Clyde E. Coon and a sub-contract for construction work has been let to Walter F. Patterson, Sr., & Son, Pittsburgh, Pa. (June 16, p. 1353.)

**NORTHERN OHIO TRACTION & LIGHT CO. (ELECTRIC).**—This company proposes an expenditure of about \$2,000,000 for improvements. The work will be extended over a long period of time, and will include double tracking on the Akron, Bedford and Cleveland division, \$387,000; improvements from Bedford, Ohio,

to Newburg, \$160,000; double track from Canton, Ohio, to Massillon, \$200,000; double tracking the Canton-Akron line between Blue Point, Ohio, and Springfield Lake, \$175,000; double track from the Akron (Ohio) terminal over private right of way to Gorge, \$340,000; the completion of a high tension line to Canton, \$280,000, and the purchase of an Akron terminal station site, \$355,000.

**NORTHERN PACIFIC.**—The construction of a branch line from Dixon, Mont., to Polson, 33.75 miles in length, has been authorized, but construction work has not yet been started nor have bids been asked for. The work will involve about 23,000 cu. yd. of material per mile, and the construction of a few small timber bridges. The maximum grade is 1 per cent.

**OREGON SHORT LINE.**—This company will complete an extension from Marshfield, Idaho, to Idaho, a distance of 19 miles. Grading of this line was completed in 1911. Track laying will be done by company forces.

**PASCAGOULA-MOSS POINT NORTHERN.**—See Alabama & Mississippi.

**SOUTHERN RAILWAY.**—The Tennessee & Carolina Southern has been extended from Chilhowee, Tenn., south to Alcoa, 6 miles. A contract has been let by this company to the Brooks-Galloway Company, Atlanta, Ga., for building double track from Duluth, Ga., to Suwanee, 5.50 miles, and from Spartanburg, S. C., to Lawsons Fork, 1.50 miles.

**TENNESSEE & CAROLINA SOUTHERN.**—See Southern Railway.

**WINSTON-SALEM SOUTHBOUND.**—A new branch has been opened for business between Whitney, N. C., and Badin, 5 miles.

**YAZOO & MISSISSIPPI VALLEY.**—This company is preparing to raise the grade of its tracks, from three to six feet, for about 12 miles between Vicksburg, Miss., and the Yazoo river. The work will be done by company forces and will involve handling about 250,000 cu. yd. of material. The company is also raising its grade for a distance of about 17 miles south of Vicksburg, 14 miles of which will be entirely new line, including a new crossing over the Big Black river. The work involves about 500,000 cu. yd. of material. The contract for the grading has been let to the H. W. Nelson Company, Chicago, Ill.

## RAILWAY STRUCTURES

**BREWSTER, OHIO.**—The Wheeling & Lake Erie has awarded a contract to W. C. Handshy & Son, Zanesville, Ohio, for constructing the Y. M. C. A. building at Brewster mentioned June 9, page 1246.

**HOUSTON, TEXAS.**—The Missouri, Kansas & Texas has awarded a contract to the American Construction Company of this city, for the erection of a reinforced concrete cotton platform at an estimated cost of \$50,000.

**MATTOON, ILL.**—The Cleveland, Cincinnati, Chicago & St. Louis will open bids in about three weeks for a brick and concrete station and office building to be 40 ft. by 150 ft. and two stories in height to be built at Mattoon.

**MENOMINEE, MICH.**—The Chicago & North Western has awarded a contract to Leyden & Ortseifen, Chicago, Ill., for the construction of a brick depot to cost about \$14,000.

**NORTH REGINA, SASK.**—The Canadian Northern is constructing a frame store building, 25 ft. by 58 ft., and 18 ft. in height, to cost about \$3,900. It is also rebuilding a portion of its machine shop recently destroyed by fire at a cost of about \$3,000. George McLeod, Winnipeg, Man., has the contract.

**ROCK ISLAND, ILL.**—The Tri-City Railway will receive bids soon for a brick and reinforced concrete shop building, 160 ft. by 300 ft., to be built at Rock Island. The building will be part one story and part two stories high, and the cost will be about \$80,000.

**SAN FRANCISCO, CAL.**—The Southern Pacific is preparing plans for a 10-story office building to be constructed at the corner of Market and Spear streets.

## Railway Financial News

**BOSTON & MAINE.**—The directors' meeting was held July 11 after a joint meeting of a committee representing directors of the Boston & Maine and some lessor companies. On this committee were, President Hustis and Henry Day, representing the Boston & Maine; Gordon Abbott, representing the Fitchburg; Phillip Dexter, representing the Boston & Lowell; W. H. McClintock, Richard Olney and Charles E. Gross, representing the Connecticut River, and Benjamin A. Kimball and Walter M. Parker, representing the Concord & Montreal. At the directors' meeting of the Boston & Maine which followed the joint conference it was decided to ask holders of the \$13,300,000 six per cent notes maturing July 17 to extend these notes to August 31, and it was announced that this action was the result of the joint conference mentioned above. The Boston & Maine directors also asked the directors of the Vermont Valley and the Connecticut River to arrange for the renewal of the notes of these companies which amount to \$2,300,000 for the Vermont Valley and \$2,450,000 for the Connecticut River, to August 31. These notes mature July 17.

**DENVER & RIO GRANDE.**—A conference was held on July 11 between various interests in the Gould estate to consider a proposal that the estate surrender its interest in the Texas & Pacific and the International & Great Northern and receive in return the Missouri Pacific's interest in the Denver & Rio Grande. While no statement as to the decision is given out, it is believed that the proposal was looked on favorably and it is also believed that the bankers—Kuhn, Loeb & Company—financing the Missouri Pacific, are favorable to this plan. Should the plan go through, it is quite possible that one system would be made of the Missouri Pacific, Texas & Pacific and International & Great Northern.

**GREAT NORTHERN.**—This company has bought the Watertown & Sioux Falls Railroad from C. O. Kalman for a price said to be \$1,250,000. The road runs from Watertown, S. D., to Sioux Falls, S. D., 103 miles. It was formerly called the South Dakota Central.

**INTERNATIONAL & GREAT NORTHERN.**—See Denver & Rio Grande.

**MISSOURI PACIFIC.**—See Denver & Rio Grande.

**NEW YORK, CHICAGO & ST. LOUIS.**—A group of Cleveland capitalists have bought from the New York Central Railroad that company's majority holdings of the stock of the New York, Chicago & St. Louis. The price paid for this stock was \$8,500,000. The par value of the stock held by the New York Central on December 31, 1915, was \$15,018,000, the total stock outstanding of the New York, Chicago & St. Louis being \$30,000,000. The New York Central carried this majority stock of the Nickel Plate on its book at a valuation of \$8,447,747. It will be seen, therefore, that the sale price was approximately the same as the book value. It is announced that the new directors of the New York, Chicago & St. Louis are as follows: O. P. Van Sweringen, M. J. Van Sweringen, Warren S. Hayden, J. R. Nutt, M. B. Johnston, Charles L. Bradley, E. W. Moore, F. E. Myers, E. R. Tinker, G. M. Murphy and G. W. Davidson. Chauncey M. Depew for the time being remains chairman of the board and William H. Canniff, president, also remains on the board of directors. The Nickel Plate operates 523 miles of road, of which 495 miles are owned and has outstanding beside the \$30,000,000 stock \$28,569,000 bonds. In 1915 its gross earnings were \$12,536,380. It is earning at the rate of very considerably more than that in the present calendar year.

**PENNSYLVANIA RAILROAD.**—This company has sold to Kuhn, Loeb & Company, New York, \$20,000,000 nine months' notes bearing interest at 3½ per cent annually. The notes have been placed privately by the bankers.

**TEXAS & PACIFIC.**—See Denver & Rio Grande.

**WHEELING & LAKE ERIE.**—For the twelfth time the sale of this road under foreclosure has been postponed. A press dispatch from Cleveland making this announcement says it is rumored that the Erie might bid for the Wheeling & Lake Erie.